

ORIGINAL

NEW APPLICATION



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BEFORE THE ARIZONA CORPORATION COMMISSION

2010 FEB 26 P 2: 23

COMMISSIONERS

KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

Arizona Corporation Commission

AZ CORP COMMISSION
DOCKET CONTROL

DOCKETED

FEB 26 2010

E-01749A-10-0071

DOCKETED BY NR

IN THE MATTER OF THE APPLICATION OF)
GRAHAM COUNTY ELECTRIC)
COOPERATIVE, INC. APPROVAL OF A LOAN)

DOCKET NO. E-01749A-10-_____

FINANCE APPLICATION

Pursuant to A.R.S. § 40-285 et seq., Graham County Electric Cooperative, Inc. ("GCEC"), hereby files with the Arizona Corporation Commission ("Commission") an Application ("Finance Application") for authorization of a loan. In order to take advantage of lower construction costs GCEC requests that this application be approved no later than by June 30, 2010. If approved, GCEC will borrow \$9,687,550 from the National Cooperative Finance Corporation ("CFC Loan") to finance construction of plant in accordance with GCEC's five-year construction work plan. In support of its Finance Application, GCEC states as follows:

1. GCEC is a non-profit corporation and public service corporation.

GCEC holds a Certificate of Convenience and Necessity, to provide Electric Distribution Service to its member-customers in Graham County, Arizona.

2. The Commission has jurisdiction over GCEC and the subject matter of this Finance Application.

3. GCEC currently provides electric service to approximately 6,065 members.

1 4. Among other things, GCEC will expend loan funds on new substations,
2 distribution lines, meters and services and miscellaneous distribution equipment to improve and
3 work on the electric distribution system.

4 5. The term of the loan will be thirty (30) years with quarterly payments of principal
5 and interest. The interest rate will be determined at the time the funds are drawn. The loan funds
6 will be drawn when needed to complete the various projects. Schedules of interest and principal
7 are included with this filing. CFC will require that all of the assets of the Cooperative be held as
8 security for the loan as it has for all previous loans to GCEC.

9 6. The entire proceeds will be used to complete the five (5) year construction work
10 plan. The five-year construction work plan is included with this filing. GCEC has also provided
11 a letter from George Nail, Professional Engineer with Transmission & Distribution Services, LLC
12 regarding the importance of an expedited Commission approval process in order to take
13 advantage of current favorable construction pricing. He states in his letter that due to the
14 economic downturn, contractors are seeing lower equipment prices and very competitive
15 construction bidding compared to years past. GCEC is requesting an accelerated approval
16 process to allow GCEC to take advantage of this lower pricing and save its member/customers
17 thousands of dollars on these projects.

18 7. The Board of Directors of Graham County Electric Cooperative, Inc. has approved
19 both the five-year construction work plan and the request for financing from CFC. Historically,
20 GCEC has financed its' construction work plans by borrowing the entire amount from CFC. The
21 public interest will be served by proceeding with the construction work plan to insure that
22 adequate capacity is available to deliver reliable power to the members of GCEC.
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1 8. GCEC intends to repay, in substantial part, the cost of the CFC Loan
2 over a thirty (30) year period through the use of its general funds.

3 9. GCEC has sufficient margins to service the debt as evidenced by the 2009 audited
4 financial statements and the ten (10) year financial forecast included with this filing.

5 10. A copy of the CFC loan documents and loan commitment from National Rural
6 Utilities Cooperative Finance Corporation (CFC) are enclosed.

7 11. The notice to customers of the financing application appeared in the local
8 newspaper on January 6, 2010 and is attached hereto.

9 12. GCEC's CFC Loan request is: (1) for lawful purpose; (2) within
10 GCEC's corporate powers; (3) compatible with the public interest; (4) within sound financial
11 practices; and (5) within the proper performance of the Cooperative as a public service
12 corporation. The CFC Loan will improve GCEC's ability to continue to provide safe and reliable
13 electric service to its member-customers.

14 13. The CFC Loan is dependant upon authorization by this Commission.

15 14. The aggregate amount of securities outstanding, and proposed to be
16 outstanding, will not exceed the fair value of GCEC's properties and business.

17 15. GCEC requests that the Commission act on this application as soon as possible
18 and issue a decision by June 30, 2010 to assist GCEC financially to maintain reliable electric
19 service and to ensure GCEC can take advantage of lower plant and construction costs due to a
20 weak economy in its area.

21 16. All correspondence with regard to this Finance Application should be
22 sent to:
23

1 John V. Wallace
2 Grand Canyon State Electric Cooperative Association, Inc.
3 120 N. 44th Street, Suite 100
4 Phoenix, Arizona 85034
5 E-mail: jwallace@gcseca.coop

6 With a copy to:

7 Steve Lines
8 GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.
9 P. O. Drawer B
10 Pima, Arizona 85543
11 Email: slines@gce.coop

12 Russ Barney
13 GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.
14 P. O. Drawer B
15 Pima, Arizona 85543
16 Email: russb@gce.coop

17 WHEREFORE, GCEC, having fully stated its Application and showing
18 that it is in the public interest for the Cooperative to receive the CFC Loan to fund construction of
19 facilities to serve GCEC's member-customers, hereby requests that the Commission:

- 20 1. Accept GCEC's Application for the CFC Loan for filing.
 - 21 2. Authorize GCEC to borrow \$9,687,550 for the lawful purposes set forth in this
22 application, and to authorize the Cooperative to take such actions necessary and
23 appropriate to execute a mortgage to secure the CFC Loan;
 - 24 3. Grant such other relief as may be in the public interest.
- 25
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1 RESPECTFULLY SUBMITTED this 26th day of February, 2010.

2
3
4 By


John V. Wallace

Grand Canyon State Electric Cooperative Association, Inc.
120 N. 44th Street, Suite 100
Phoenix, Arizona 85034

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6
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8 Original and thirteen (13) copies of
9 GCEC's Application
10 filed this 26th day of February, 2010
11 with:

12 DOCKET CONTROL
13 Arizona Corporation Commission
14 1200 West Washington Street
15 Phoenix, Arizona 85007
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**GRAHAM COUNTY ELECTRIC
COOPERATIVE, INC.**

**PO DRAWER B
PIMA, ARIZONA 85543**

**APPLICATION FOR APPROVAL OF
LONG-TERM DEBT**

DOCKET NO. E-01749A-10

MARCH 2010

STATE OF ARIZONA)
COUNTY OF GRAHAM) :ss.

**PUBLIC NOTICE
OF
AN APPLICATION FOR
AN ORDER
AUTHORIZING THE
BORROWING OF \$9,687,550
BY GRAHAM
COUNTY ELECTRIC
COOPERATIVE, INC.**

Graham County Electric Cooperative, Inc. ("Company") filed an Application with the Arizona Corporation Commission ("Commission") for an order authorizing Applicant to borrow \$9,687,550 for thirty-five (35) years to finance construction. The application is available for inspection during regular business hours at the office of the Commission in Phoenix, Arizona, and the Company's offices located at 9 West Center Street, Pima, Arizona.

Intervention in the Commission's proceedings on the application shall be permitted to any person entitled by law to intervene and having a direct substantial interest in this matter. Persons desiring to intervene must file a Motion to Intervene with the Commission which must be served upon applicant and which, at a minimum, shall contain the following information:

1. The name, address and telephone number of the proposed intervenor and of any person upon whom service of documents is to be made if different than the intervenor.

2. A short statement of the proposed intervenor's interest in the proceeding.

3. Whether the proposed intervenor desires a formal evidentiary hearing on the application and the reasons for such a hearing.

4. A statement certifying that a copy of the Motion to Intervene has been mailed to Applicant.

The granting of Motions to Intervene shall be governed by A.A.C. R14-3-105, except that all Motions to Intervene must be filed on, or before, the 15th day after this notice.

Req.: Graham County Electric Cooperative, Inc.

Published: January 6, 2010, in the Eastern Arizona Courier, Safford, Arizona 85546.

AFFIDAVIT OF PUBLICATION

SHERRY L. ENGLISH

being first

duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the EASTERN ARIZONA COURIER newspaper printed and published bi-weekly in the County of Graham, State of Arizona, and of general circulation in the city of Safford, County of Graham, State of Arizona and elsewhere, and the hereto attached

APPLICATION FOR AN
ORDER AUTHORIZING
THE BORROWING OF
\$9,687,550

was printed and published correctly in the regular and entire issue of said EASTERN ARIZONA COURIER for 1 issues, that the first was

made on the 6th day of JANUARY 20 10

and the last publication thereof was made on the 6th day of

JANUARY 20 10

that said

publication was made on each of the following dates, to wit:
01/06/10

Request of GRAHAM CTY UTILITIES-LGLS

EASTERN ARIZONA COURIER

By

Sherry L. English

Subscribed sworn to before me this 6th day of JANUARY 20 10

Notary Public and for the County of Graham, State of Arizona
My Commission Expires: Dec. 11, 2010



Transmission & Distribution Services, LLC
Consulting Engineers & Surveyors

January 4, 2010

Mr. Steven M. Olea, Director
Arizona Corporation Commission
Utilities Division
1200 West Washington
Phoenix, AZ 85701-2996

Mr. Olea

Subject: Graham County Electric Cooperative Pima Substation

The engineers and employees of **Transmission and Distribution Services, LLC** have over 100 years of combined experience designing substations, switching stations, distribution lines and transmission lines. The company employs Professional Engineers that are licensed in nine southwestern states including Arizona. Our Arizona Firm Registration is 14737-0.

The employees of T&D Services have designed, performed construction review and commissioned three previous substations for Graham County Electrical Cooperative. In addition, T&D Services has designed numerous distribution and transmission lines using wood and steel as needed for particular projects.

The new Pima Substation is in GCEC's new 5-year work plan. This substation will serve the area of town south and west of Pima near the rodeo grounds. It is located in an area that is expected to have new growth. The circuits from existing substations serving this area are overloaded with corresponding low voltage. The new sub is urgently needed to transfer load off of these overloaded feeders and provide backup during emergency conditions.

The work plan indicates that this sub will not be under construction until late 2010 or early 2011. However, the downturn in the economy has created a situation that is advantageous for GCEC. We are seeing lower equipment prices and very competitive construction bidding for similar projects that are significantly lower than they have been in many years. As the economy improves, we are expecting the cost of materials and labor to return to last year's levels. In order to take advantage of the lower prices on material and labor, we need to seriously consider starting construction no later than May of 2010. Therefore we are encouraging the ACC to accelerate approval of the 5-year work plan construction schedule so GCEC can take advantage of the lower prices, thus saving GCEC member/customers thousands of dollars in cost.

Thank you for your consideration,

Respectfully submitted,

Transmission & Distribution Services, LLC.

A handwritten signature in black ink, appearing to read "George R. Nail". The signature is fluid and cursive, with a large initial "G" and "N".

George R. Nail, PE - AZ # 24283
President
8904 Washington St. NE
Albuquerque, NM 87113
(505) 344-4234

CFC LOAN DOCUMENTS

LOAN AGREEMENT

LOAN AGREEMENT (this "Agreement") dated as of _____, between GRAHAM COUNTY ELECTRIC COOPERATIVE, INC. ("Borrower"), a corporation organized and existing under the laws of the State of Arizona and NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION ("CFC"), a cooperative association organized and existing under the laws of the District of Columbia.

RECITALS

WHEREAS, the Borrower has applied to CFC for a loan for the purposes set forth in Schedule 1 hereto, and CFC is willing to make such a loan to the Borrower on the terms and conditions stated herein; and

WHEREAS, the Borrower has agreed to execute one or more promissory notes to evidence an indebtedness in the aggregate principal amount of the CFC Commitment (as hereinafter defined).

NOW, THEREFORE, for and in consideration of the premises and the mutual covenants hereinafter contained, the parties hereto agree and bind themselves as follows:

ARTICLE I

DEFINITIONS

Section 1.01 For purposes of this Agreement, the following capitalized terms shall have the following meanings (such definitions to be equally applicable to the singular and the plural form thereof). Capitalized terms that are not defined herein shall have the meanings as set forth in the Mortgage.

"Accounting Requirements" shall mean any system of accounts prescribed by a federal regulatory authority having jurisdiction over the Borrower or, in the absence thereof, the requirements of GAAP applicable to businesses similar to that of the Borrower.

"Advance" shall mean each advance of funds by CFC to the Borrower pursuant to the terms and conditions of this Agreement.

"Amortization Basis Date" shall mean the first calendar day of the month following the end of the Billing Cycle in which the Advance occurs, provided, however, that if the Advance is made on the first day of a Billing Cycle, and such day is a Business Day, then the Amortization Basis Date shall be the date of the Advance.

"Average DSC Ratio" shall mean the average of the Borrower's two highest annual DSC Ratios during the most recent three calendar years.

"Billing Cycle" shall mean any 3-month period ending on, and including, a P ayment Date.

"Business Day" shall mean any day that both CFC and the depository institution CFC utilizes for funds transfers hereunder are open for business.

"CFC Commitment" shall have the meaning as defined in Schedule 1.

"CFC Fixed Rate" shall mean (i) such fixed rate as is then available for loans similarly classified pursuant to CFC's policies and procedures then in effect, or (ii) such other fixed rate as may be agreed to by the parties and reflected on the written requisition for funds in the form attached as Exhibit A hereto.

"CFC Fixed Rate Term" shall mean the specific period of time that a CFC Fixed Rate is in effect for an Advance.

"CFC Variable Rate" shall mean (i) the rate established by CFC for variable interest rate long-term loans similarly classified pursuant to the long-term loan programs established by CFC from time to time, or (ii) such other variable rate as may be agreed to by the parties on the written requisition for funds in the form attached as Exhibit A hereto.

"CREB Provisions" shall mean the specific covenants relating to funds requisition, tax status of the CREBs and completion and termination certificates contained in any loan agreements related to a clean renewable energy project of the Borrower funded by proceeds of one or more series of clean renewable energy bonds issued by CFC.

"Capital Certificate" shall mean a certificate, or book entry form of account, evidencing the Borrower's purchase of subordinated debt instruments issued by CFC from time to time. Such instruments may be denoted by CFC as "Loan Capital Term Certificates", "Member Capital Securities", "Subordinated Term Certificates", or other like designations.

"Conversion Request" shall mean a written request to CFC from any duly authorized officer or other employee of the Borrower requesting an interest rate conversion available pursuant to the terms of this Agreement.

"Debt Service Coverage ("DSC") Ratio" shall mean the ratio determined as follows: for any calendar year add (i) Operating Margins, (ii) Non-Operating Margins--Interest, (iii) Interest Expense, (iv) Depreciation and Amortization Expense, and (v) cash received in respect of generation and transmission and other capital credits, and divide the sum so obtained by the sum of all payments of Principal and Interest Expense required to be made during such calendar year; provided, however, that in the event that any amount of Long-Term Debt has been refinanced during such year, the payments of Principal and Interest Expense required to be made during such year on account of such refinanced amount of Long-Term Debt shall be based (in lieu of actual payments required to be made on such refinanced amount of Long-Term Debt) upon the larger of (i) an annualization of the payments required to be made with respect to the refinancing debt during the portion of such year such refinancing debt is outstanding or (ii) the payment of Principal and Interest Expense required to be made during the following year on account of such refinancing debt.

"Default Rate" shall mean a rate per annum equal to the interest rate in effect for an Advance plus two hundred basis points.

"Depreciation and Amortization Expense" shall mean an amount constituting the depreciation and amortization of the Borrower computed pursuant to Accounting Requirements.

"Distributions" shall mean, with respect to the Borrower, any dividend, patronage refund, patronage capital retirement or cash distribution to its members, or consumers (including but not limited to any general cancellation or abatement of charges for electric energy or services furnished by the Borrower). The term "Distribution" shall *not* include (a) a distribution by the Borrower to the estate of a deceased patron, (b) repayment by the Borrower of a membership fee upon termination of a membership, or (c) any rebate to a patron resulting from a cost abatement received by the Borrower, such as a reduction of wholesale power cost previously incurred.

"Draw Period" shall have the meaning as described in Schedule 1 hereto.

"Environmental Laws" shall mean all laws, rules and regulations promulgated by any Governmental Authority, with which Borrower is required to comply, regarding the use, treatment, discharge, storage, management, handling, manufacture, generation, processing, recycling, distribution, transport, release of or exposure to any Hazardous Material.

"Equity" shall mean the aggregate of the Borrower's equities and margins computed pursuant to Accounting Requirements.

"Event of Default" shall have the meaning as described in Article VI hereof.

"GAAP" shall mean generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board and the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board.

"Governmental Authority" shall mean the government of the United States of America, any other nation or government, any state or other political subdivision thereof, whether state or local, and any agency, authority, instrumentality, regulatory body, court or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government.

"Hazardous Material" shall mean any (a) petroleum or petroleum products, radioactive materials, asbestos-containing materials, polychlorinated biphenyls, lead and radon gas, and (b) any other substance designated as hazardous or toxic or as a pollutant or contaminant under any Environmental Law.

"Interest Expense" shall mean an amount constituting the interest expense with respect to Long-Term Debt of the Borrower computed pursuant to Accounting Requirements. In computing Interest Expense, there shall be added, to the extent not otherwise included, an amount equal to 33-1/3% of the excess of Restricted Rentals paid by the Borrower over 2% of the Borrower's Equity.

"Interest Rate Reset Date" shall mean, with respect to any Advance, the first day following the expiration of the CFC Fixed Rate Term for such Advance.

"LCTC Purchase Provisions" shall mean the specific conditions and covenants in any Prior Loan Document requiring the Borrower to purchase subordinated debt instruments issued by CFC that may be referred to in Prior Loan Documents as "LCTCs", "Loan Capital Term Certificates", "Capital Certificates", "Equity Certificates", "Subordinated Term Certificates" or instruments with other like designations.

"Lien" shall mean any statutory or common law consensual or non-consensual mortgage, pledge, security interest, encumbrance, lien, right of set off, claim or charge of any kind, including, without limitation, any conditional sale or other title retention transaction, any lease transaction in the nature thereof and any secured transaction under the Uniform Commercial Code.

"Loan Documents" shall mean this Agreement, the Note, the Mortgage and all other documents or instruments executed, delivered or executed and delivered by the Borrower and evidencing, securing, governing or otherwise pertaining to the loan made by CFC to the Borrower, pursuant to this Agreement.

"Long-Term Debt" shall mean an amount constituting the long-term debt of the Borrower computed pursuant to Accounting Requirements.

"Make-Whole Premium" shall mean, with respect to any principal sum of a CFC Fixed Rate Advance paid prior to the expiration of the CFC Fixed Rate Term applicable thereto (the "Prepaid Principal Amount"), an amount calculated as set forth below. The Make-Whole Premium represents Lender's reinvestment loss resulting from making a fixed rate loan.

(1) Compute the amount of interest ("Loan Interest") that would have been due on the Prepaid Principal Amount at the applicable CFC Fixed Rate for the period from the prepayment date through the end of the CFC Fixed Rate Term (such period is hereinafter referred to as the "Remaining Term"), calculated on the basis of a 30-day month/360-day year, adjusted to include any amortization of principal in accordance with the amortization schedule that would have been in effect for the Prepaid Principal Amount.

(2) Compute the amount of interest ("Investment Interest") that would be earned on the Prepaid Principal Amount (adjusted to include any applicable amortization) if invested in a United States government security with a term equivalent to the Remaining Term, calculated on the basis of a 30-day month/360-day year. The yield used to determine the amount of Investment Interest shall be based upon United States government security yields dated no more than two Business Days prior to the prepayment date in Federal Reserve statistical release H.15 (519), under the caption "U.S. Government Securities/Treasury Constant Maturities". If there is no such United States government security under said caption with a term equivalent to the Remaining Term, then the yield shall be determined by interpolating between the terms of whole years nearest to the Remaining Term.

(3) Subtract the amount of Investment Interest from the amount of Loan Interest. If the difference is zero or less, then the Make-Whole Premium is zero. If the difference is greater than zero, then the Make-Whole premium is a sum equal to the present value of the difference, applying as the present value discount a rate equal to the yield utilized to determine Investment Interest.

"Maturity Date" with respect to each Note shall have the meaning ascribed to it therein.

"Mortgage" shall have the meaning as described in Schedule 1 hereto.

"Mortgaged Property" shall have the meaning ascribed to it in the Mortgage.

"Non-Operating Margins--Interest" shall mean the amount representing the interest component of non-operating margins of the Borrower computed pursuant to Accounting Requirements.

"Note" or "Notes" shall mean each secured promissory note, payable to the order of CFC, executed by the Borrower, dated as of even date herewith, pursuant to this Agreement as identified on Schedule 1 hereto, and shall include all substitute, amended or replacement promissory notes.

"Obligations" shall mean any and all liabilities, obligations or indebtedness owing by the Borrower to CFC, of any kind or description, irrespective of whether for the payment of money, whether direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising.

"Operating Margins" shall mean the amount of patronage capital and operating margins of the Borrower computed pursuant to Accounting Requirements.

"Payment Date" shall mean the last day of each of the months referred to in Schedule 1.

"Permitted Encumbrances" shall have the meaning ascribed to it in the Mortgage.

"Person" shall mean natural persons, cooperatives, corporations, limited liability companies, limited partnerships, general partnerships, limited liability partnerships, joint ventures, associations, companies, trusts or other organizations, irrespective of whether they are legal entities, and Governmental Authorities.

"Principal" shall mean the amount of principal billed on account of Long-Term Debt of the Borrower computed pursuant to Accounting Requirements.

"Prior Loan Documents" shall mean, collectively, all long term loan agreements entered into prior to the date hereof by and between CFC and the Borrower, and all promissory notes delivered pursuant thereto secured under the Mortgage.

"Restricted Rentals" shall mean all rentals required to be paid under finance leases and charged to income, exclusive of any amounts paid under any such lease (whether or not designated therein as rental or additional rental) for maintenance or repairs, insurance, taxes, assessments, water rates or similar charges. For the purpose of this definition the term "finance lease" shall mean any lease having a rental term (including the term for which such lease may be renewed or extended at the option of the lessee) in excess of three (3) years and covering property having an initial cost in excess of \$250,000 other than automobiles, trucks, trailers, other vehicles (including without limitation aircraft and ships), office, garage and warehouse space and office equipment (including without limitation computers).

"Subsidiary" as to any Person, shall mean a corporation, partnership, limited partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or

both, by such Person. Unless otherwise qualified, all references to a "Subsidiary" or to "Subsidiaries" in this Agreement shall refer to a Subsidiary or Subsidiaries of the Borrower.

"Total Assets" shall mean an amount constituting the total assets of the Borrower computed pursuant to Accounting Requirements.

"Total Utility Plant" shall mean the amount constituting the total utility plant of the Borrower computed pursuant to Accounting Requirements.

ARTICLE II

REPRESENTATIONS AND WARRANTIES

Section 2.01 The Borrower represents and warrants to CFC that as of the date of this Agreement:

A. Good Standing. The Borrower is duly organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, is duly qualified to do business and is in good standing in those states in which it is required to be qualified to conduct its business. The Borrower is a member in good standing of CFC.

B. Subsidiaries and Ownership. Schedule 1 hereto sets forth a complete and accurate list of the Subsidiaries of the Borrower showing the percentage of the Borrower's ownership of the outstanding stock, membership interests or partnership interests, as applicable, of each Subsidiary.

C. Authority; Validity. The Borrower has the power and authority to enter into this Agreement, the Note and the Mortgage; to make the borrowing hereunder; to execute and deliver all documents and instruments required hereunder and to incur and perform the obligations provided for herein, in the Note and in the Mortgage, all of which have been duly authorized by all necessary and proper action; and no consent or approval of any Person, including, as applicable and without limitation, members of the Borrower, which has not been obtained is required as a condition to the validity or enforceability hereof or thereof.

Each of this Agreement, the Note and the Mortgage is, and when fully executed and delivered will be, legal, valid and binding upon the Borrower and enforceable against the Borrower in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditors' rights generally and subject to general principles of equity.

D. No Conflicting Agreements. The execution and delivery of the Loan Documents and performance by the Borrower of the obligations thereunder, and the transactions contemplated hereby or thereby, will not: (i) violate any provision of law, any order, rule or regulation of any court or other agency of government, any award of any arbitrator, the articles of incorporation or by-laws of the Borrower, or any indenture, contract, agreement, mortgage, deed of trust or other instrument to which the Borrower is a party or by which it or any of its property is bound; or (ii) be in conflict with, result in a breach of or constitute (with due notice and/or lapse of time) a default under, any such award, indenture, contract, agreement, mortgage, deed of trust or other instrument, or result in the creation or imposition of any Lien (other than contemplated hereby) upon any of the property or assets of the Borrower.

The Borrower is not in default in any material respect under any agreement or instrument to which it is a party or by which it is bound and no event or condition exists which constitutes a default, or with the giving of notice or lapse of time, or both, would constitute a default under any such agreement or instrument.

E. Taxes. The Borrower, and each of its Subsidiaries, has filed or caused to be filed all federal, state and local tax returns which are required to be filed and has paid or caused to be paid all federal, state and local taxes, assessments, and governmental charges and levies thereon, including interest and penalties to the extent that such taxes, assessments, and governmental charges and levies have become due, except for such taxes, assessments, and governmental charges and levies which the Borrower or any Subsidiary is contesting in good faith by appropriate proceedings for which adequate reserves have been set aside.

F. Licenses and Permits. The Borrower has duly obtained and now holds all licenses, permits, certifications, approvals and the like necessary to own and operate its property and business that are required by Governmental Authorities and each remains valid and in full force and effect.

G. Litigation. There are no outstanding judgments, suits, claims, actions or proceedings pending or, to the knowledge of the Borrower, threatened against or affecting the Borrower, its Subsidiaries or any of their respective properties which, if adversely determined, either individually or collectively, would have a material adverse effect upon the business, operations, prospects, assets, liabilities or financial condition of the Borrower or its Subsidiaries. The Borrower and its Subsidiaries are not, to the Borrower's knowledge, in default or violation with respect to any judgment, order, writ, injunction, decree, rule or regulation of any Governmental Authority which would have a material adverse effect upon the business, operations, prospects, assets, liabilities or financial condition of the Borrower or its Subsidiaries.

H. Financial Statements. The balance sheet of the Borrower as at the date identified in Schedule 1 hereto, the statement of operations of the Borrower for the period ending on said date, and the interim financial statements of the Borrower, all heretofore furnished to CFC, are complete and correct. Said balance sheet fairly presents the financial condition of the Borrower as at said date and said statement of operations fairly reflects its operations for the period ending on said date. The Borrower has no contingent obligations or extraordinary forward or long-term commitments except as specifically stated in said balance sheet or herein. There has been no material adverse change in the financial condition or operations of the Borrower from that set forth in said financial statements except changes disclosed in writing to CFC prior to the date hereof.

I. Borrower's Legal Status. Schedule 1 hereto accurately sets forth: (i) the Borrower's exact legal name, (ii) the Borrower's organizational type and jurisdiction of organization, (iii) the Borrower's organizational identification number or accurate statement that the Borrower has none, and (iv) the Borrower's place of business or, if more than one, its chief executive office as well as the Borrower's mailing address if different.

J. Required Approvals. No license, consent or approval of any Governmental Authority is required to enable the Borrower to enter into this Agreement, the Note and the Mortgage, or to perform any of its Obligations provided for in such documents, including without limitation (and if applicable), that of any state public utilities commission, any state public service commission, and the Federal Energy Regulatory Commission, except as disclosed in Schedule 1 hereto, all of which the Borrower has obtained prior to the date hereof.

K. Compliance With Laws. The Borrower and each Subsidiary is in compliance, in all material respects, with all applicable requirements of law and all applicable rules and regulations of each Governmental Authority.

L. Disclosure. To the Borrower's knowledge, information and belief, neither this Agreement nor any document, certificate or financial statement furnished to CFC by or on behalf of the Borrower in connection herewith (all such documents, certificates and financial statements, taken as a whole) contains any untrue statement of a material fact or omits to state any material fact necessary in order to make the statements contained herein and therein not misleading.

M. No Other Liens. As to property which is presently included in the description of Mortgaged Property, the Borrower has not, without the prior written approval of CFC, executed or authenticated any security agreement or mortgage, or filed or authorized any financing statement to be filed with respect to assets owned by it, other than security agreements, mortgages and financing statements in favor of CFC, except as disclosed in writing to CFC prior to the date hereof or relating to Permitted Encumbrances.

N. Environmental Matters. Except as to matters which individually or in the aggregate would not have a material adverse effect upon the business or financial condition of the Borrower or its Subsidiaries, (i) Borrower is in compliance with all Environmental Laws (including, but not limited to, having any required permits and licenses), (ii) there have been no releases (other than releases remediated in compliance with Environmental Laws) from any underground or aboveground storage tanks (or piping associated therewith) that are or were present at the Mortgaged Property, (iii) Borrower has not received written notice or claim of any violation of any Environmental Law, (iv) there is no pending investigation of Borrower in regard to any Environmental Law, and (v) to the best of Borrower's knowledge, there has not been any release or contamination (other than releases or contamination remediated in compliance with Environmental Laws) resulting from the presence of Hazardous Materials on property owned, leased or operated by the Borrower.

ARTICLE III

LOAN

Section 3.01 Advances. The Borrower shall submit its request for an Advance to CFC in writing (which may be submitted by facsimile) no later than 12:00 noon local time at CFC's offices in Herndon, Virginia on the Business Day prior to the Business Day the Borrower seeks to have funds advanced.

At the end of the Draw Period, CFC shall have no further obligation to make Advances. The obligation of the Borrower to repay the Advances shall be evidenced by one or more Notes.

Section 3.02 Interest Rate and Payment. Notes shall be payable and bear interest as follows:

A. Payments; Maturity; Amortization.

(i) Each Note shall have a Maturity Date that is not more than forty (40) years from the date hereof, *provided, however*, that if such date is not a Payment Date, then the Maturity Date shall be the Payment Date immediately preceding such date.

(ii) Prior to or at the time of each Advance, the Borrower shall elect, with respect to such Advance, (1) an amortization method for principal, or (2) not to amortize principal. If no election is made, then the Advance shall amortize over a period ending on the earlier of the date that is thirty-five (35) years from the date of such Advance and the Maturity Date.

(a) *Amortizing Advances*: Each Advance that the Borrower elects to amortize shall amortize over a period not to exceed thirty-five (35) years from the date of such Advance, *provided, however*, that such period shall not extend beyond the Maturity Date. For each Advance, the Borrower shall promptly pay interest in the amount invoiced on each Payment Date until the first Payment Date of the Billing Cycle in which the Amortization Basis Date occurs. On such Payment Date, and on each Payment Date thereafter, the Borrower shall promptly pay interest and principal in the amounts invoiced. If not sooner paid, any amount due on account of the unpaid principal, interest accrued thereon and fees, if any, shall be due and payable on the Maturity Date. The amortization method for each Advance shall be as stated on Schedule 1 or, if not so stated, then as stated on the written requisition for such Advance submitted by the Borrower to CFC pursuant to the terms hereof.

(b) *Non-Amortizing Advances*: Each Advance that the Borrower elects not to amortize shall be repaid within thirty-five (35) years from the date of such Advance, or the Maturity Date, whichever is earlier. On each Payment Date, the Borrower shall promptly pay interest only until the final Payment Date corresponding to the term of such Advance, or the Maturity Date (whichever is applicable), upon which date all unpaid principal, interest accrued thereon and fees, if any, shall be due and payable. If the term of a non-amortizing Advance ends on a date that is not a Payment Date, then the repayment of such Advance shall be due and payable on the Payment Date immediately preceding such date.

(iii) CFC will invoice the Borrower at least ten (10) days before each Payment Date, *provided, however*, that CFC's failure to send an invoice shall not constitute a waiver by CFC or be deemed to relieve the Borrower of its obligation to make payments as and when due as provided for herein.

(iv) No provision of this Agreement or of any Note shall require the payment, or permit the collection, of interest in excess of the highest rate permitted by applicable law.

B. Application of Payments. Each payment shall be applied to the Obligations, first to any fees, costs, expenses or charges other than interest or principal, second to interest accrued, and the balance to principal.

C. Selection of Interest Rate and Interest Rate Computation. Prior to each Advance on a Note, the Borrower must select in writing either a CFC Fixed Rate or the CFC Variable Rate, as follows:

(i) CFC Fixed Rate. If the Borrower selects a CFC Fixed Rate for an Advance, then such rate shall be in effect for the CFC Fixed Rate Term selected by the Borrower. CFC shall provide the Borrower with at least sixty (60) days prior written or electronic notice of the Interest Rate Reset Date for such Advance. The Borrower may then select any available interest rate option for such Advance pursuant to CFC's policies of general application. The Advance shall

bear interest according to the interest rate option so selected beginning on the Interest Rate Reset Date. If the Borrower does not select an interest rate in writing prior to the Interest Rate Reset Date, then beginning on the Interest Rate Reset Date the Advance shall bear interest at, the CFC Variable Rate. CFC agrees that its long-term loan policies will include a fixed interest rate option until the Maturity Date. For any Advance, the Borrower may not select a CFC Fixed Rate with a CFC Fixed Rate Term that extends beyond the Maturity Date. Interest on amortizing Advances bearing interest at a CFC Fixed Rate shall be computed for the actual number of days elapsed on the basis of a year of 365 days, until the first day of the Billing Cycle in which the Amortization Basis Date occurs; interest shall then be computed on the basis of a 30-day month and 360-day year. Interest on non-amortizing Advances bearing interest at a CFC Fixed Rate shall be computed for the actual number of days elapsed on the basis of a year of 365 days.

(ii) CFC Variable Rate. If the Borrower selects the CFC Variable Rate for an Advance, then such CFC Variable Rate shall apply until the Maturity Date, unless the Borrower elects to convert to a CFC Fixed Rate pursuant to the terms hereof. Interest on Advances bearing interest at the CFC Variable Rate shall be computed for the actual number of days elapsed on the basis of a year of 365 days.

Section 3.03 Conversion of Interest Rates. The Borrower may at any time exercise any or all of the following interest rate conversion options by submitting a Conversion Request. The effective date of the interest rate conversion shall be determined by CFC pursuant to its policies of general application.

A. CFC Variable Rate to a CFC Fixed Rate. The Borrower may convert the interest rate on an outstanding Advance from the CFC Variable Rate to a CFC Fixed Rate without a fee. Upon such conversion, the new interest rate shall be the CFC Fixed Rate in effect on the date of the Conversion Request for the CFC Fixed Rate Term selected by the Borrower.

B. CFC Fixed Rate to CFC Variable Rate. The Borrower may convert the interest rate on an outstanding Advance from a CFC Fixed Rate to the CFC Variable Rate, provided that the Borrower promptly pays the invoiced amount for any applicable conversion fee calculated pursuant to CFC's long-term loan policies as established from time to time for similarly classified long-term loans. Upon such conversion, the new interest rate shall be the CFC Variable Rate in effect on the date of the Conversion Request.

C. A CFC Fixed Rate to Another CFC Fixed Rate. The Borrower may convert the interest rate on an outstanding Advance from a CFC Fixed Rate to a different CFC Fixed Rate by selecting a different CFC Fixed Rate Term, provided that the Borrower promptly pays the invoiced amount for any applicable conversion fee calculated pursuant to CFC's long-term loan policies as established from time to time for similarly classified long-term loans. Upon such conversion, the new interest rate shall be the CFC Fixed Rate in effect on the date of the Conversion Request for the new CFC Fixed Rate Term selected by the Borrower.

Section 3.04 Optional Prepayment. The Borrower may at any time, on not less than thirty (30) days prior written notice to CFC, prepay any Advance, in whole or in part. In the event the Borrower prepays all or any part of an Advance (regardless of the source of such prepayment and whether voluntary, by acceleration or otherwise), the Borrower shall pay any prepayment fee or Make-Whole Premium as CFC may prescribe pursuant to the terms of this Section 3.04. All prepayments shall be accompanied by payment of accrued and unpaid interest on the amount of and to the date of the repayment. All prepayments shall be applied

first to fees, second to the payment of accrued and unpaid interest, and then to the unpaid balance of the principal amount of the applicable Advance. If the Advance bears interest at the CFC Variable Rate, the Borrower may prepay the Advance or any portion thereof, as the case may be, at any time subject to the terms hereof and said prepayment fee shall be in an amount equal to thirty three (33) basis points times the amount being prepaid. If the Advance bears interest at a CFC Fixed Rate, the Borrower may (a) prepay the Advance on the day before an Interest Rate Reset Date provided that the Borrower shall pay a prepayment fee in an amount equal to thirty three (33) basis points times the amount being prepaid or (b) any such other date provided that the Borrower shall pay a prepayment fee in an amount equal to thirty three (33) basis points times the amount being prepaid plus any applicable Make-Whole Premium.

Section 3.05 Mandatory Prepayment. If there is a change in the Borrower's corporate structure (including without limitation by merger, consolidation, conversion or acquisition), then upon the effective date of such change, (a) the Borrower shall no longer have the ability to request, and CFC shall have no obligation to make, Advances hereunder and (b) the Borrower shall prepay the outstanding principal balance of all Obligations, together with any accrued but unpaid interest thereon, any unpaid costs or expenses provided for herein, and a prepayment premium as set forth in any agreement between the Borrower and CFC with respect to any such Obligation or, if not specified therein, as prescribed by CFC pursuant to its policies of general application in effect from time to time.

Notwithstanding the foregoing, if after giving effect to such change in Borrower's corporate structure, Borrower, or its successor in interest, is engaged in the furnishing of electric utility services to its members and patrons for their use as ultimate consumers and is organized as a cooperative, nonprofit corporation, public utility district, municipality, or other public governmental body, Borrower shall retain the ability to request, and CFC shall retain the obligation to make, Advances hereunder and no prepayment shall be required under this Section 3.05.

Section 3.06 Default Rate. If Borrower defaults on its obligation to make a payment due hereunder by the applicable Payment Date, and such default continues for thirty days thereafter, then beginning on the thirty-first day after the Payment Date and for so long as such default continues, Advances shall bear interest at the Default Rate.

ARTICLE IV

CONDITIONS OF LENDING

Section 4.01 The obligation of CFC to make any Advance hereunder is subject to satisfaction of the following conditions in form and substance satisfactory to CFC:

A. Legal Matters. All legal matters incident to the consummation of the transactions hereby contemplated shall be satisfactory to counsel for CFC.

B. Documents. CFC shall have been furnished with (i) the executed Loan Documents, (ii) certified copies of all such organizational documents and proceedings of the Borrower authorizing the transactions hereby contemplated as CFC shall require, (iii) an opinion of counsel for the Borrower addressing such legal matters as CFC shall reasonably require, and (iv) all other such documents as CFC may reasonably request.

C. Government Approvals. The Borrower shall have furnished to CFC true and correct copies of all certificates, authorizations, consents, permits and licenses from Governmental Authorities necessary for the execution or delivery of the Loan Documents or performance by the Borrower of the obligations thereunder.

D. Representations and Warranties. The representations and warranties contained in Article II shall be true on the date of the making of each Advance hereunder with the same effect as though such representations and warranties had been made on such date; no Event of Default and no event which, with the lapse of time or the notice and lapse of time would become such an Event of Default, shall have occurred and be continuing or will have occurred after giving effect to each Advance on the books of the Borrower; there shall have occurred no material adverse change in the business or condition, financial or otherwise, of the Borrower; and nothing shall have occurred which in the opinion of CFC materially and adversely affects the Borrower's ability to perform its obligations hereunder.

E. Mortgage Recordation. The Mortgage (and any amendments, supplements or restatements as CFC may require from time to time) shall have been duly filed, recorded or indexed in all jurisdictions necessary (and in any other jurisdiction that CFC shall have reasonably requested) to provide CFC a lien, subject to Permitted Encumbrances, on all of the Borrower's real property, all in accordance with applicable law, and the Borrower shall have paid all applicable taxes, recording and filing fees and caused satisfactory evidence thereof to be furnished to CFC.

F. UCC Filings. Uniform Commercial Code financing statements (and any continuation statements and other amendments thereto that CFC shall require from time to time) shall have been duly filed, recorded or indexed in all jurisdictions necessary (and in any other jurisdiction that CFC shall have reasonably requested) to provide CFC a perfected security interest, subject to Permitted Encumbrances, in the Mortgaged Property which may be perfected by the filing of a financing statement, all in accordance with applicable law, and the Borrower shall have paid all applicable taxes, recording and filing fees and caused satisfactory evidence thereof to be furnished to CFC.

G. Requisitions. The Borrower will requisition each Advance by submitting its written requisition to CFC in the form attached as Exhibit A hereto. Requisitions for Advances shall be made only for the purposes set forth in Schedule 1 hereto.

H. Other Information. The Borrower shall have furnished such other information as CFC may reasonably require, including but not limited to (i) information regarding the specific purpose for an Advance and the use thereof, (ii) feasibility studies, cash flow projections, financial analyses and pro forma financial statements sufficient to demonstrate to CFC's reasonable satisfaction that after giving effect to the Advance requested, the Borrower shall continue to achieve the DSC ratio set forth in Section 5.01.A herein, to meet all of its debt service obligations, and otherwise to perform and to comply with all other covenants and conditions set forth in this Agreement, and (iii) any other information as CFC may reasonably request. CFC's obligation to make any Advance hereunder is conditioned upon prior receipt and approval of the Borrower's written requisition and other information and documentation, if any, as CFC may have requested pursuant to this paragraph.

I. Special Conditions. CFC shall be fully satisfied that the Borrower has complied with all special conditions identified in Schedule 1 hereto.

ARTICLE V

COVENANTS

Section 5.01 Affirmative Covenants. The Borrower covenants and agrees with CFC that until payment in full of the Note and performance of all obligations of the Borrower hereunder:

A. Financial Ratios; Design of Rates. The Borrower shall achieve an Average DSC Ratio of not less than 1.35. The Borrower shall not decrease its rates for electric service if it has failed to achieve a DSC Ratio of 1.35 for the calendar year prior to such reduction subject only to an order from a Governmental Authority properly exercising jurisdiction over the Borrower.

B. Loan Proceeds. The Borrower shall use the proceeds of this loan solely for the purposes identified on Schedule 1 hereto.

C. Notice. The Borrower shall promptly notify CFC in writing of:

(i) any material adverse change in the business, operations, prospects, assets, liabilities or financial condition of the Borrower;

(ii) the institution or threat of any litigation or administrative proceeding of any nature involving the Borrower which could materially affect the business, operations, prospects, assets, liabilities or financial condition of the Borrower;

(iii) the occurrence of an Event of Default hereunder, or any event that, with the giving of notice or lapse of time, or both, would constitute an Event of Default.

D. Default Notices. Upon receipt of any notices with respect to a default by the Borrower under the terms of any evidence of any indebtedness with parties other than CFC or of any loan agreement, mortgage or other agreement relating thereto, the Borrower shall deliver copies of such notice to CFC.

E. Annual Certificates.

(i) Within one hundred twenty (120) days after the close of each calendar year, commencing with the year in which the initial Advance hereunder shall have been made, the Borrower will deliver to CFC a written statement, in form and substance satisfactory to CFC, either (a) signed by the Borrower's General Manager or Chief Executive Officer, or (b) submitted electronically through means made available to the Borrower by CFC, stating that during such year, and that to the best of said person's knowledge, the Borrower has fulfilled all of its obligations under this Agreement, the Note, and the Mortgage throughout such year or, if there has been a default in the fulfillment of any such obligations, specifying each such default known to said person and the nature and status thereof.

(ii) The Borrower shall deliver to CFC within one hundred twenty (120) days after the close of each calendar year, a certification, in form and substance satisfactory to CFC, regarding the condition of the Mortgaged Property prepared by a professional engineer satisfactory to CFC. The Borrower shall also deliver to CFC such other information as CFC may reasonably request from time to time.

F. Capital Certificate Purchase. The Borrower will purchase Capital Certificates, if required, in an amount calculated pursuant to CFC's policies of general application and shall pay for such Capital Certificates as required thereby.

G. Financial Books; Financial Reports; Right of Inspection. The Borrower will at all times keep, and safely preserve, proper books, records and accounts in which full and true entries will be made of all of the dealings, business and affairs of the Borrower, in accordance with Accounting Requirements. When requested by CFC, the Borrower will prepare and furnish CFC from time to time, periodic financial and statistical reports on its condition and operations. All of such reports shall be in such form and include such information as may be specified by CFC. Within one hundred twenty (120) days of the end of each calendar year during the term hereof, the Borrower shall furnish to CFC a full and complete report of its financial condition and statement of its operations as of the end of such calendar year, in form and substance satisfactory to CFC. In addition, within one hundred twenty (120) days of the end of each the Borrower's fiscal years during the term hereof, the Borrower shall furnish to CFC a full and complete consolidated and consolidating report of its financial condition and statement of its operations as of the end of such fiscal year, audited and certified by independent certified public accountants nationally recognized or otherwise satisfactory to CFC and accompanied by a report of such audit in form and substance satisfactory to CFC, including without limitation a consolidated and consolidating balance sheet and the related consolidated and consolidating statements of income and cash flow. CFC, through its representatives, shall at all times during reasonable business hours and upon prior notice have access to, and the right to inspect and make copies of, any or all books, records and accounts, and any or all invoices, contracts, leases, payrolls, canceled checks, statements and other documents and papers of every kind belonging to or in the possession of the Borrower or in anyway pertaining to its property or business.

H. Notice of Additional Secured Debt. The Borrower will notify CFC promptly in writing if it incurs any additional secured indebtedness other than indebtedness to CFC or indebtedness otherwise provided for in the Mortgage.

I. Funds Requisition. The Borrower agrees (i) that CFC may rely conclusively upon the interest rate option, interest rate term and other written instructions submitted to CFC in the Borrower's written request for an Advance hereunder, (ii) that such instructions shall constitute a covenant under this Agreement to repay the Advance in accordance with such instructions, the applicable Note, the Mortgage and this Agreement, and (iii) to request Advances only for the purposes set forth in Schedule 1 hereto.

J. Compliance With Laws. The Borrower and each Subsidiary shall remain in compliance, in all material respects, with all applicable requirements of law and applicable rules and regulations of each Governmental Authority.

K. Taxes. The Borrower shall pay, or cause to be paid all taxes, assessments or governmental charges lawfully levied or imposed on or against it and its properties prior to the time they become delinquent, except for any taxes, assessments or charges that are being contested in good faith and with respect to which adequate reserves as determined in good faith by the Borrower have been established and are being maintained.

L. Further Assurances. The Borrower shall execute any and all further documents, financing statements, agreements and instruments, and take all such further actions (including the filing and recording of financing statements, fixture filings, mortgages, deeds of trust and other documents), which may be required under any applicable law, or which

CFC may reasonably request, to effectuate the transactions contemplated by the Loan Documents or to grant, preserve, protect or perfect the Liens created or intended to be created thereby. The Borrower also agrees to provide to CFC, from time to time upon request, evidence reasonably satisfactory to CFC as to the perfection and priority of the Liens created or intended to be created by the Loan Documents.

M. Environmental Covenants. Borrower shall:

(i) at its own cost, comply in all material respects with all applicable Environmental Laws, including, but not limited to, any required remediation; and

(ii) if it receives any written communication alleging Borrower's violation of any Environmental Law, provide CFC with a copy thereof within ten (10) Business Days after receipt, and promptly take appropriate action to remedy, cure, defend, or otherwise affirmatively respond to the matter.

N. Limitations on Loans, Investments and Other Obligations. The aggregate amount of all purchases, investments, loans, guarantees, commitments and other obligations described in Section 5.02.D(i). of this Agreement shall at all times be less than fifteen percent (15%) of Total Utility Plant or fifty percent (50%) of Equity, whichever is greater.

O. Special Covenants. The Borrower agrees that it will comply with any special covenants identified in Schedule 1 hereto.

Section 5.02 Negative Covenants. The Borrower covenants and agrees with CFC that until payment in full of the Note and performance of all obligations of the Borrower hereunder, the Borrower will not, directly or indirectly, without CFC's prior written consent:

A. Limitations on Mergers. Consolidate with, merge, or sell all or substantially all of its business or assets, or enter into an agreement for such consolidation, merger or sale, to another entity or person unless such action is either approved, as is evidenced by the prior written consent of CFC, or the purchaser, successor or resulting corporation is or becomes a member in good standing of CFC and assumes the due and punctual payment of the Note and the due and punctual performance of the covenants contained in the Mortgage and this Agreement.

B. Limitations on Sale, Lease or Transfer of Capital Assets; Application of Proceeds. Sell, lease or transfer (or enter into an agreement to sell, lease or transfer) any capital asset, except in accordance with this Section 5.02.B. If no Event of Default (and no event which with notice or lapse of time and notice would become an Event of Default) shall have occurred and be continuing, the Borrower may, without the prior written consent of CFC, sell, lease or transfer (or enter into an agreement to sell, lease or transfer) any capital asset in exchange for fair market value consideration paid to the Borrower if the value of such capital asset is less than five percent (5%) of Total Utility Plant and the aggregate value of capital assets sold, leased or transferred in any 12-month period is less than ten percent (10%) of Total Utility Plant. If the Borrower does sell, lease or transfer any capital assets, then the proceeds thereof (less ordinary and reasonable expenses incident to such transaction) shall immediately (i) be applied as a prepayment of the Note, to such installments as may be designated by CFC at the time of any such prepayment; (ii) in the case of dispositions of equipment, material or scrap, applied to the purchase of other property useful in the Borrower's business, although not necessarily of the same kind as the property disposed of, which shall forthwith become subject to the lien of the Mortgage;

or (iii) applied to the acquisition or construction of other property or in reimbursement of the costs of such property.

C. Limitation on Dividends, Patronage Refunds and Other Distributions.

(i) Make any Distribution if an Event of Default under this Agreement has occurred and is continuing; or

(ii) Make a Distribution in any calendar year in an amount greater than thirty percent (30%) of the Borrower's total margins for the preceding calendar year, unless, after giving effect to the Distribution, the total Equity of the Borrower will be at least twenty percent (20%) of its Total Assets.

D. Limitations on Loans, Investments and Other Obligations.

(i) (a) Purchase, or make any commitment to purchase, any stock, bonds, notes, debentures, or other securities or obligations of or beneficial interests in, (b) make, or enter into a commitment to make, any other investment, monetary or otherwise, in, (c) make, or enter into a commitment to make, any loan to, or (d) guarantee, assume, or otherwise become liable for, or enter into a commitment to guarantee, assume, or otherwise become liable for, any obligation of any Person if, after giving effect to such purchase, investment, loan, guarantee or commitment, the aggregate amount thereof would exceed the greater of fifteen percent (15%) of Total Utility Plant or fifty percent (50%) of Equity.

(ii) The following shall not be included in the limitation of purchases, investments, loans and guarantees in (i) above: (a) bonds, notes, debentures, stock, or other securities or obligations issued by or guaranteed by the United States or any agency or instrumentality thereof; (b) bonds, notes, debentures, stock, commercial paper, subordinated capital certificates, or any other security or obligation issued by CFC or by institutions whose senior unsecured debt obligations are rated by at least two nationally recognized rating organizations in either of their two highest categories; (c) investments incidental to loans made by CFC; (d) any deposit that is fully insured by the United States; (e) loans and grants made by any Governmental Authority to the Borrower under any rural economic development program, but only to the extent that such loans and grants are non-recourse to the Borrower; and (f) unretired patronage capital allocated to the Borrower by CFC, a cooperative from which the Borrower purchases electric power, or a statewide cooperative association of which Borrower is a member.

(iii) In no event may the Borrower take any action pursuant to subsection (i) if an Event of Default under this Agreement has occurred and is continuing,

E. Organizational Change. Change its type of organization or other legal structure, except as permitted by Section 5.02.A. hereof, in which case the Borrower shall provide at least 30 days prior written notice to CFC together with all documentation reflecting such change as CFC may reasonably require.

F. Notice of Change in Borrower Information. Change its (i) state of incorporation, (ii) legal name, (iii) mailing address, or (iv) organizational identification number, if it has one, unless the Borrower provides written notice to CFC at least thirty (30) days prior to the effective date of any such change together with all documentation reflecting any such change as CFC may reasonably require.

ARTICLE VI

EVENTS OF DEFAULT

Section 6.01 The following shall be "Events of Default" under this Agreement:

A. Representations and Warranties. Any representation or warranty made by the Borrower herein, or in any of the other Loan Documents, or in any certificate or financial statement furnished to CFC hereunder or under any of the other Loan Documents shall prove to be false or misleading in any material respect.

B. Payment. The Borrower shall fail to pay (whether upon stated maturity, by acceleration, or otherwise) any principal, interest, premium (if any) or other amount payable under the Note and the Loan Documents within five (5) Business Days after the due date thereof.

C. Other Covenants.

(i) **No Grace Period.** Failure of the Borrower to observe or perform any covenant or agreement contained in Sections 5.01.A, 5.01.B, 5.01.D, 5.01.E, 5.01.G, 5.01.I, 5.01.N or 5.02 of this Agreement.

(ii) **Thirty Day Grace Period.** Failure of the Borrower to observe or perform any other covenant or agreement contained in this Agreement or any of the other Loan Documents, which shall remain unremedied for thirty (30) calendar days after written notice thereof shall have been given to the Borrower by CFC.

D. Legal Existence, Permits and Licenses. The Borrower shall forfeit or otherwise be deprived of (i) its authority to conduct business in the jurisdiction in which it is organized or in any other jurisdiction where such authority is required in order for the Borrower to conduct its business in such jurisdiction or (ii) permits, easements, consents or licenses required to carry on any material portion of its business.

E. Other CFC Obligations. The Borrower shall be in breach or default of any Obligation, which breach or default continues uncured beyond the expiration of any applicable grace period.

F. Other Obligations. The Borrower shall (i) fail to make any payment of any principal, premium or any other amount due or interest on any indebtedness with parties other than CFC which shall remain unpaid beyond the expiration of any applicable grace period, or (ii) be in breach or default with respect to any other term of any evidence of any other indebtedness with parties other than CFC or of any loan agreement, mortgage or other agreement relating thereto which breach or default continues uncured beyond the expiration of any applicable grace period, if the effect of such failure, default or breach is to cause the holder or holders of that indebtedness to cause that indebtedness to become or be declared due prior to its stated maturity (upon the giving or receiving of notice, lapse of time, both or otherwise).

G. Involuntary Bankruptcy. An involuntary case or other proceeding shall be commenced against the Borrower seeking liquidation, reorganization or other relief with respect to it or its debts under bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it

or any substantial part of its property and such involuntary case or other proceeding shall continue without dismissal or stay for a period of sixty (60) days; or an order for relief shall be entered against the Borrower under the federal bankruptcy laws or applicable state law as now or hereafter in effect.

H. Insolvency. The Borrower shall commence a voluntary case or other proceeding seeking liquidation, reorganization or other relief with respect to itself or its debts under any bankruptcy, insolvency or other similar law now or hereafter in effect or seeking the appointment of a trustee, receiver, liquidator, custodian or other similar official of it or any substantial part of its property, or shall consent to any such relief or to the appointment of or taking possession by any such official in an involuntary case or proceeding commenced against it, or shall make a general assignment for the benefit of creditors, or shall admit in writing its inability to, or be generally unable to, pay its debts as they become due, or shall take any action to authorize any of the foregoing.

I. Dissolution or Liquidation. Other than as provided in subsection H. above, the dissolution or liquidation of the Borrower, or failure by the Borrower promptly to forestall or remove any execution, garnishment or attachment of such consequence as will impair its ability to continue its business or fulfill its obligations and such execution, garnishment or attachment shall not be vacated within sixty (60) days. The term "dissolution or liquidation of the Borrower", as used in this subsection, shall not be construed to include the cessation of the corporate existence of the Borrower resulting either from a merger or consolidation of the Borrower into or with another corporation following a transfer of all or substantially all its assets as an entirety, under the conditions set forth in Section 5.02.A.

J. Material Adverse Change. Any material adverse change in the business or condition, financial or otherwise, of the Borrower.

K. Monetary Judgment. The Borrower shall suffer any money judgment not covered by insurance, writ or warrant of attachment or similar process involving an amount in excess of \$100,000 and shall not discharge, vacate, bond or stay the same within a period of sixty (60) days.

L. Nonmonetary Judgment. One or more nonmonetary judgments or orders (including, without limitation, injunctions, writs or warrants of attachment, garnishment, execution, distraint, replevin or similar process) shall be rendered against the Borrower that, either individually or in the aggregate, could reasonably be expected to have a material adverse effect upon the business, operations, prospects, assets, liabilities or financial condition of the Borrower.

ARTICLE VII

REMEDIES

Section 7.01 If any of the Events of Default listed in Section 6 hereof shall occur after the date of this Agreement and shall not have been remedied within the applicable grace periods specified therein, then CFC may:

- (i) Cease making Advances hereunder;

- (ii) Declare all unpaid principal outstanding on the Note, all accrued and unpaid interest thereon, and all other Obligations to be immediately due and payable and the same shall thereupon become immediately due and payable without presentment, demand, protest or notice of any kind, all of which are hereby expressly waived;
- (iii) Exercise rights of setoff or recoupment and apply any and all amounts held, or hereafter held, by CFC or owed to the Borrower or for the credit or account of the Borrower against any and all of the Obligations of the Borrower now or hereafter existing hereunder or under the Note, including, but not limited to, patronage capital allocations and retirements, money due to Borrower from equity certificates purchased from CFC, and any membership or other fees that would otherwise be returned to Borrower. The rights of CFC under this section are in addition to any other rights and remedies (including other rights of setoff or recoupment) which CFC may have. The Borrower waives all rights of setoff, deduction, recoupment or counterclaim;
- (iv) Pursue all rights and remedies available to CFC that are contemplated by the Mortgage and the other Loan Documents in the manner, upon the conditions, and with the effect provided in the Mortgage and the other Loan Documents, including, but not limited to, a suit for specific performance, injunctive relief or damages;
- (v) Pursue any other rights and remedies available to CFC at law or in equity.

Nothing herein shall limit the right of CFC to pursue all rights and remedies available to a creditor following the occurrence of an Event of Default. Each right, power and remedy of CFC shall be cumulative and concurrent, and recourse to one or more rights or remedies shall not constitute a waiver of any other right, power or remedy.

ARTICLE VIII

MISCELLANEOUS

Section 8.01 Notices. All notices, requests and other communications provided for herein including, without limitation, any modifications of, or waivers, requests or consents under, this Agreement shall be given or made in writing (including, without limitation, by telecopy) and delivered to the intended recipient at the "Address for Notices" specified below; or, as to any party, at such other address as shall be designated by such party in a notice to each other party. All such communications shall be deemed to have been duly given (i) when personally delivered including, without limitation, by overnight mail or courier service, (ii) in the case of notice by United States mail, certified or registered, postage prepaid, return receipt requested, upon receipt thereof, or (iii) in the case of notice by telecopy, upon transmission thereof, provided such transmission is promptly confirmed by either of the methods set forth in clauses (i) or (ii) above in each case given or addressed as provided for herein. The Address for Notices of each of the respective parties is as follows:

National Rural Utilities Cooperative Finance Corporation
2201 Cooperative Way
Herndon, Virginia 20171-3025
Attention: Senior Vice President – Member Services

Fax # 703-709-6776

The Borrower:

The address set forth in
Schedule 1 hereto

Section 8.02 Expenses. Borrower shall reimburse CFC for any reasonable costs and out-of-pocket expenses paid or incurred by CFC (including, without limitation, reasonable fees and expenses of outside attorneys, paralegals and consultants) for all actions CFC takes, (a) to enforce the payment of any Obligation, to effect collection of any Mortgaged Property, or in preparation for such enforcement or collection, (b) to institute, maintain, preserve, enforce and foreclose on CFC's security interest in or Lien on any of the Mortgaged Property, whether through judicial proceedings or otherwise, (c) to restructure any of the Obligations, (d) to review, approve or grant any consents or waivers hereunder, (e) to prepare, negotiate, execute, deliver, review, amend or modify this Agreement, and (f) to prepare, negotiate, execute, deliver, review, amend or modify any other agreements, documents and instruments deemed necessary or appropriate by CFC in connection with any of the foregoing.

The amount of all such expenses identified in this Section 8.02 shall be secured by the Mortgage and shall be payable upon demand, and if not paid, shall accrue interest at the then prevailing CFC Variable Rate plus two hundred basis points.

Section 8.03 Late Payments. If payment of any amount due hereunder is not received at CFC's office in Herndon, Virginia, or such other location as CFC may designate to the Borrower within five (5) Business Days after the due date thereof, the Borrower will pay to CFC, in addition to all other amounts due under the terms of the Loan Documents, any late payment charge as may be fixed by CFC from time to time pursuant to its policies of general application as in effect from time to time.

Section 8.04 Non-Business Day Payments. If any payment to be made by the Borrower hereunder shall become due on a day which is not a Business Day, such payment shall be made on the next succeeding Business Day and such extension of time shall be included in computing any interest in respect of such payment.

Section 8.05 Filing Fees. To the extent permitted by law, the Borrower agrees to pay all expenses of CFC (including the reasonable fees and expenses of its counsel) in connection with the filing, registration, recordation or perfection of the Mortgage and any other security instruments as may be required by CFC in connection with this Agreement, including, without limitation, all documentary stamps, recordation and transfer taxes and other costs and taxes incident to execution, filing, registration or recordation of any document or instrument in connection herewith. The Borrower agrees to save harmless and indemnify CFC from and against any liability resulting from the failure to pay any required documentary stamps, recordation and transfer taxes, recording costs, or any other expenses incurred by CFC in connection with this Agreement. The provisions of this subsection shall survive the execution and delivery of this Agreement and the payment of all other amounts due under the Loan Documents.

Section 8.06 Waiver; Modification. No failure on the part of CFC to exercise, and no delay in exercising, any right or power hereunder or under the other Loan Documents shall operate as a waiver thereof, nor shall any single or partial exercise by CFC of any right

hereunder, or any abandonment or discontinuance of steps to enforce such right or power, preclude any other or further exercise thereof or the exercise of any other right or power. No modification or waiver of any provision of this Agreement, the Note or the other Loan Documents and no consent to any departure by the Borrower therefrom shall in any event be effective unless the same shall be in writing by the party granting such modification, waiver or consent, and then such modification, waiver or consent shall be effective only in the specific instance and for the purpose for which given.

SECTION 8.07 GOVERNING LAW; SUBMISSION TO JURISDICTION; WAIVER OF JURY TRIAL.

(A) THE PERFORMANCE AND CONSTRUCTION OF THIS AGREEMENT AND THE NOTE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE COMMONWEALTH OF VIRGINIA.

(B) THE BORROWER HEREBY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE UNITED STATES COURTS LOCATED IN VIRGINIA AND OF ANY STATE COURT SO LOCATED FOR PURPOSES OF ALL LEGAL PROCEEDINGS ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY. THE BORROWER IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY OBJECTIONS THAT IT MAY NOW OR HEREAFTER HAVE TO THE ESTABLISHING OF THE VENUE OF ANY SUCH PROCEEDINGS BROUGHT IN SUCH A COURT AND ANY CLAIM THAT ANY SUCH PROCEEDING HAS BEEN BROUGHT IN AN INCONVENIENT FORUM.

(C) THE BORROWER AND CFC EACH HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

SECTION 8.08 INDEMNIFICATION. THE BORROWER HEREBY INDEMNIFIES AND AGREES TO HOLD HARMLESS, AND DEFEND CFC AND ITS MEMBERS, DIRECTORS, OFFICERS, EMPLOYEES, AGENTS, ATTORNEYS AND REPRESENTATIVES (EACH AN "INDEMNITEE") FOR, FROM, AND AGAINST ALL CLAIMS, DAMAGES, LOSSES, LIABILITIES, COSTS, AND EXPENSES (INCLUDING, WITHOUT LIMITATION, COSTS AND EXPENSES OF LITIGATION AND REASONABLE ATTORNEYS' FEES) ARISING FROM ANY CLAIM OR DEMAND IN RESPECT OF THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS, THE MORTGAGED PROPERTY, OR THE TRANSACTIONS DESCRIBED IN THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS AND ARISING AT ANY TIME, WHETHER BEFORE OR AFTER PAYMENT AND PERFORMANCE OF ALL OBLIGATIONS UNDER THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS IN FULL, EXCEPTING ANY SUCH MATTERS ARISING SOLELY FROM THE GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF CFC OR ANY INDEMNITEE. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN SECTION 8.10 HEREOF, THE OBLIGATIONS IMPOSED UPON THE BORROWER BY THIS SECTION SHALL SURVIVE THE REPAYMENT OF THE NOTE, THE TERMINATION OF THIS AGREEMENT AND THE TERMINATION OR RELEASE OF THE LIEN OF THE MORTGAGE.

Section 8.09 Complete Agreement. This Agreement, together with the schedules to this Agreement, the Note and the other Loan Documents, and the other agreements and matters referred to herein or by their terms referring hereto, is intended by the parties as a final

expression of their agreement and is intended as a complete statement of the terms and conditions of their agreement. In the event of any conflict in the terms and provisions of this Agreement and any other Loan Documents, the terms and provisions of this Agreement shall control.

Section 8.10 Survival; Successors and Assigns. All covenants, agreements, representations and warranties of the Borrower which are contained in this Agreement shall survive the execution and delivery to CFC of the Loan Documents and the making of the Loan hereunder and shall continue in full force and effect until all of the obligations under the Loan Documents have been paid in full. All covenants, agreements, representations and warranties of the Borrower which are contained in this Agreement shall inure to the benefit of the successors and assigns of CFC. The Borrower shall not have the right to assign its rights or obligations under this Agreement without the prior written consent of CFC, except as provided in Section 5.02.A hereof.

Section 8.11 Use of Terms. The use of the singular herein shall also refer to the plural, and vice versa.

Section 8.12 Headings. The headings and sub-headings contained in this Agreement are intended to be used for convenience only and do not constitute part of this Agreement.

Section 8.13 Severability. If any term, provision or condition, or any part thereof, of this Agreement, the Note or the other Loan Documents shall for any reason be found or held invalid or unenforceable by any governmental agency or court of competent jurisdiction, such invalidity or unenforceability shall not affect the remainder of such term, provision or condition nor any other term, provision or condition, and this Agreement, the Note and the other Loan Documents shall survive and be construed as if such invalid or unenforceable term, provision or condition had not been contained therein.

Section 8.14. Prior Loan Documents. It is understood and agreed that the covenants set forth in this Agreement under the Article entitled "COVENANTS" shall restate and supersede all of the covenants set forth in the corresponding Article or Articles of each Prior Loan Document dealing with covenants, regardless of the specific title or titles thereof, *except for* (a) the LCTC Purchase Provisions, (b) the CREB Provisions, and (c) any special covenant or other specific term set forth on Schedule 1 to any Prior Loan Document, unless otherwise explicitly agreed to in writing by CFC, or superseded by explicit reference thereto in this Agreement. For purposes of the foregoing, this Section 8.14 shall be deemed to amend all Prior Loan Documents, and notwithstanding termination of this Agreement for any reason, this Section 8.14 shall nevertheless survive and shall continue to amend each Prior Loan Document for as long as the respective Prior Loan Document is in effect, but only with respect to the matters set forth in this Section 8.14.

Section 8.15 Binding Effect. This Agreement shall become effective when it shall have been executed by both the Borrower and CFC and thereafter shall be binding upon and inure to the benefit of the Borrower and CFC and their respective successors and assigns.

Section 8.16 Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed an original and all of which together will constitute one and the same document. Signature pages may be detached from the counterparts and attached to a single copy of this Agreement to physically form one document.

Section 8.17 Reserved.

Section 8.18 Schedule 1. Schedule 1 attached hereto is an integral part of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the day and year first above written.

(SEAL)

GRAHAM COUNTY ELECTRIC COOPERATIVE,
INC.

By: _____

Title: _____

Attest: _____
Secretary

(SEAL)

NATIONAL RURAL UTILITIES
COOPERATIVE FINANCE CORPORATION

By: _____
Assistant Secretary-Treasurer

Attest: _____
Assistant Secretary-Treasurer

SCHEDULE 1

1. The Borrower shall use the proceeds of this loan solely for any or all of the following purposes: (A) to own or to operate any of the property listed in (i) through (vi) below (whether such property now exists or is hereafter constructed by the Borrower or acquired by lease, contract, purchase or otherwise); (B) to own or to operate any interest or other participation in any of such property; (C) to own or to exercise any rights to the output or capacity of any such property; and (D) for the reasonable costs and expenses incurred by the Borrower in connection with any of such property *provided, however*, that the Borrower may also use the proceeds of this loan to purchase Capital Certificates as required herein.:
 - (i) interests in all electric generation, transmission, distribution, conservation, load management, general plant and other facilities related to the Borrower's electric business;
 - (ii) interests in, and equipment or property (real or personal) used in the operation of, any mine, well, pipeline, plant, structure or other facility used for the development, production, manufacture, storage, fabrication or processing of fuel for the Borrower's electric business;
 - (iii) with CFC's prior written consent, interests in, and equipment or property (real or personal) used in the operation of, any mine, well, pipeline, plant, structure or other facility with respect to the supply of water in connection with the Borrower's electric business;
 - (iv) with CFC's prior written consent, water and waste systems, solid waste disposal facilities, natural gas distribution systems, telecommunications and other electronic communications systems, in each case located substantially within the Borrower's electric service territory;
 - (v) with CFC's prior written consent, interests in other community infrastructure located substantially within the Borrower's electric service territory and not specifically identified herein; and
 - (vi) with respect to each of the foregoing (i) through (v):
 - (a) all property, fixtures, structures and other proper ty associated therewith;
 - (b) all additions, betterments, extensions, and improvements thereto;
 - (c) all lands, easements and rights-of-way associated therewith; and
 - (d) all licenses, contract rights and other tangible and intangible assets used or useful in connection with or related thereto.
2. The aggregate CFC Commitment is \$9,687,550.00. Within this aggregate amount, the Borrower may, at its discretion, execute one or more Notes, each Note representing a separate loan with CFC and containing a face amount and Maturity Date in accordance with the terms, conditions and provisions of this Agreement.

3. Draw Period shall mean the period of beginning on the date hereof and ending on the date that is five (5) years thereafter.
4. The Mortgage shall mean the Restated Mortgage and Security Agreement dated as of February 23, 2004 between the Borrower and CFC, as it may have been supplemented, amended, consolidated, or restated from time to time.
5. The Notes executed pursuant hereto and the amortization method for such Notes are as follows:

LOAN NUMBER	AMOUNT	AMORTIZATION METHOD
AZ017-V-9011	\$9,687,550.00	As selected by Borrower in a written funds requisition at the time of Advance

6. The Payment Date months are March, June, September and December.
7. The Subsidiaries of the Borrower referred to in Section 2.01.B are:

<u>Name of Subsidiary</u>	<u>% of Borrower's ownership</u>
N/A	
8. The date of the Borrower's balance sheet referred to in Section 2.01.H is September 30, 2007-2009.
9. The Borrower's exact legal name is: Graham County Electric Cooperative, Inc.
10. The Borrower's organizational type is: Corporation
11. The Borrower is organized under the laws of the state of: Arizona
12. The Borrower's organizational identification number is: 0039240-0
13. The place of business or, if more than one, the chief executive office of the Borrower referred to in Section 2.01.I is 9 West Center, Pima, Arizona 85543-0290.
14. The Governmental Authority referred to in Section 2.01.J is: Arizona Corporation Commission
15. The special conditions referred to in Section 4.01.I are: None
16. The special covenants referred to in Section 5.01.O are as follows: None
17. The address for notices to the Borrower referred to in Section 8.01 is P. O. Drawer B, Pima, Arizona 85543-0290, Attention: General Manager, Fax: (928) 485-9491.

SECURED PROMISSORY NOTE

\$9,687,550.00

dated as of _____

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC., an Arizona corporation (the "Borrower"), for value received, hereby promises to pay, without setoff, deduction, recoupment or counterclaim, to the order of NATIONAL RURAL UTILITIES COOPERATIVE FINANCE CORPORATION (the "Payee"), at its office in Herndon, Virginia office or such other location as the Payee may designate to the Borrower, in lawful money of the United States, the principal sum of NINE MILLION SIX HUNDRED EIGHTY SEVEN THOUSAND FIVE HUNDRED FIFTY AND NO/100 DOLLARS (\$9,687,550.00), or such lesser sum of the aggregate unpaid principal amount of all advances made by the Payee pursuant to that certain Loan Agreement dated as of even date herewith between the Borrower and the Payee, as it may be amended from time to time (herein called the "Loan Agreement"), and to pay interest on all amounts remaining unpaid hereunder from the date of each advance in like money, at said office, at the rate and in amounts and payable on the dates provided in the Loan Agreement together with any other amount payable under the Loan Agreement. If not sooner paid, any balance of the principal amount and interest accrued thereon shall be due and payable forty (40) years from the date of the Loan Agreement (such date herein called the "Maturity Date") *provided, however*, that if such date is not a Payment Date (as defined in the Loan Agreement), then the Maturity Date shall be the Payment Date immediately preceding such date.

This Note is secured under a Restated Mortgage and Security Agreement dated as of February 23, 2004 between the Borrower and the Payee, as it may have been or shall be supplemented, amended, consolidated or restated from time to time ("Mortgage"). This Note is one of the Notes referred to in, and has been executed and delivered pursuant to, the Loan Agreement.

The principal hereof and interest accrued thereon and any other amount due under the Loan Agreement may be declared to be forthwith due and payable in the manner, upon the conditions, and with the effect provided in the Mortgage or the Loan Agreement.

The Borrower waives demand, presentment for payment, notice of dishonor, protest, notice of protest, and notice of non-payment of this Note.

IN WITNESS WHEREOF the Borrower has caused this Note to be signed in its corporate name and its corporate seal to be hereunto affixed and to be attested by its duly authorized officers, all as of the day and year first above written.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

(SEAL)

By: _____

Title: _____

Attest: _____

Secretary

Loan No. AZ017-V-9011

CERTIFICATE OF RESOLUTIONS AND INCUMBENCY

I, _____, do hereby certify that (i) I am the Secretary of Graham County Electric Cooperative, Inc. (hereinafter called the "Cooperative"); (ii) the following are true and correct copies of resolutions duly adopted by the board of directors of the Cooperative at a meeting held on _____; (iii) the meeting was duly and regularly called and held in accordance with the articles and bylaws of the Cooperative; (iv) the Cooperative is duly incorporated, validly existing and in good standing under the laws of the state of its incorporation and there is no pending or contemplated proceeding for the merger, consolidation, sale of assets or business or dissolution of the Cooperative; (v) forms of the loan documents were submitted to the meeting and were authorized by the board of directors to be executed; (vi) none of the following resolutions has been rescinded or modified as of this date; and (vii) the persons authorized below have been duly elected or appointed to their respective positions and occupied such positions on the date of actual execution of the loan documents:

RESOLVED, that the Cooperative borrow from National Rural Utilities Cooperative Finance Corporation (CFC), from time to time as determined by the officers or proper persons designated by the board of directors of the Cooperative, an aggregate amount not to exceed \$9,687,550.00, and purchase with general funds a Capital Certificate, if required, in an amount not to exceed the amount set forth in the loan agreement governing such loan; and

RESOLVED, that the proceeds of this loan be used for the purpose set forth in the Loan Agreement; and

RESOLVED, that the individuals listed below are hereby authorized to execute and to deliver to CFC the following documents (including as many counterparts as may be required):

- a) a loan agreement with CFC governing the loan substantially in the form of the loan agreement submitted to this meeting; and
- b) one or more secured promissory notes payable to the order of National Rural Utilities Cooperative Finance Corporation, which in the aggregate equal the principal amount of \$9,687,550.00, substantially in the form of the note presented to this meeting.

RESOLVED, that each of the following individuals is hereby authorized in the name and on behalf of the Cooperative to execute and to deliver all such other documents and instruments as may be necessary or appropriate, to make all payments, and to do all such other acts as in the opinion of such authorized individual acting may be necessary or appropriate in order to carry out the purposes and intent of the foregoing resolutions:

<u>Office or Title</u>	<u>Name (typed or printed)</u>
<u>President</u>	_____
_____	_____
_____	_____

IN WITNESS WHEREOF I have hereunto set my hand and affixed the seal of the Cooperative
this

_____ day of _____, _____

Secretary

(SEAL)

FOLLOW INSTRUCTIONS (front and back) CAREFULLY

A. NAME & PHONE OF CONTACT AT FILER [optional]

THE ABOVE SPACE IS FOR FILING OFFICE USE ONLY

1. DEBTOR'S EXACT FULL LEGAL NAME - insert only one debtor name (1a or 1b) - do not abbreviate or combine names

2. ADDITIONAL DEBTOR'S EXACT FULL LEGAL NAME - insert only one debtor name (2a or 2b) - do not abbreviate or combine names

3 SECURED PARTY'S NAME (or NAME of TOTAL ASSIGNEE of ASSIGNOR S/P) - insert only one secured party name (3a or 3b)

4. This FINANCING STATEMENT covers the following collateral:

5. ALTERNATIVE DESIGNATION [if applicable]:		LESSEE/LESSOR	CONSIGNEE/CONSIGNOR	BAILEE/BAILOR	SELLER/BUYER	AG. LIEN	NON-UCC FILING
6.	This FINANCING STATEMENT is to be filed [for record] (or recorded) in the REAL ESTATE RECORDS. Attach Addendum [if applicable]		7. Check to REQUEST SEARCH REPORT(S) on Debtor(s) [ADDITIONAL FEE] [optional]		All Debtors	Debtor 1	Debtor 2
8. OPTIONAL FILER REFERENCE DATA							

FILING OFFICE COPY — UCC FINANCING STATEMENT (FORM UCC1) (REV. 05/22/02)

Instructions for UCC Financing Statement (Form UCC1)

Please type or laser-print this form. Be sure it is completely legible. Read all Instructions, especially Instruction 1; correct Debtor name is crucial. Follow Instructions completely.

Fill in form very carefully; mistakes may have important legal consequences. If you have questions, consult your attorney. Filing office cannot give legal advice. Do not insert anything in the open space in the upper portion of this form; it is reserved for filing office use.

When properly completed, send Filing Office Copy, with required fee, to filing office. If you want an acknowledgment, complete item B and, if filing in a filing office that returns an acknowledgment copy furnished by filer, you may also send Acknowledgment Copy; otherwise detach. If you want to make a search request, complete item 7 (after reading Instruction 7 below) and send Search Report Copy, otherwise detach. Always detach Debtor and Secured Party Copies.

If you need to use attachments, you are encouraged to use either Addendum (Form UCC1Ad) or Additional Party (Form UCC1AP).

A. To assist filing offices that might wish to communicate with filer, filer may provide information in item A. This item is optional.

B. Complete item B if you want an acknowledgment sent to you. If filing in a filing office that returns an acknowledgment copy furnished by filer, present simultaneously with this form a carbon or other copy of this form for use as an acknowledgment copy.

1. **Debtor name:** Enter only one Debtor name in item 1, an organization's name (1a) or an individual's name (1b). Enter Debtor's exact full legal name. Don't abbreviate.
 - 1a. **Organization Debtor.** "Organization" means an entity having a legal identity separate from its owner. A partnership is an organization; a sole proprietorship is not an organization, even if it does business under a trade name. If Debtor is a partnership, enter exact full legal name of partnership; you need not enter names of partners as additional Debtors. If Debtor is a registered organization (e.g., corporation, limited partnership, limited liability company), it is advisable to examine Debtor's current filed charter documents to determine Debtor's correct name, organization type, and jurisdiction of organization.
 - 1b. **Individual Debtor.** "Individual" means a natural person; this includes a sole proprietorship, whether or not operating under a trade name. Don't use prefixes (Mr., Mrs., Ms.). Use suffix box only for titles of lineage (Jr., Sr., III) and not for other suffixes or titles (e.g., M.D.). Use married woman's personal name (Mary Smith, not Mrs. John Smith). Enter individual Debtor's family name (surname) in Last Name box, first given name in First Name box, and all additional given names in Middle Name box.
For both organization and individual Debtors: Don't use Debtor's trade name, DBA, AKA, FKA, Division name, etc. in place of or combined with Debtor's legal name; you may add such other names as additional Debtors if you wish (but this is neither required nor recommended).
 - 1c. An address is always required for the Debtor named in 1a or 1b.
 - 1d. Reserved for Financing Statements to be filed in North Dakota or South Dakota only. If this Financing Statement is to be filed in North Dakota or South Dakota, the Debtor's taxpayer identification number (tax ID#) — social security number or employer identification number must be placed in this box.
 - 1e,f,g. "Additional information re organization Debtor" is always required. Type of organization and jurisdiction of organization as well as Debtor's exact legal name can be determined from Debtor's current filed charter document. Organizational ID #, if any, is assigned by the agency where the charter document was filed; this is different from tax ID #; this should be entered preceded by the 2-character U.S. Postal identification of state of organization if one of the United States (e.g., CA12345, for a California corporation whose organizational ID # is 12345); if agency does not assign organizational ID #, check box in item 1g indicating "none."
- Note:** If Debtor is a trust or a trustee acting with respect to property held in trust, enter Debtor's name in item 1 and attach Addendum (Form UCC1Ad) and check appropriate box in item 17. If Debtor is a decedent's estate, enter name of deceased individual in item 1b and attach Addendum (Form UCC1Ad) and check appropriate box in item 17. If Debtor is a transmitting utility or this Financing Statement is filed in connection with a Manufactured-Home Transaction or a Public-Finance Transaction as defined in applicable Commercial Code, attach Addendum (Form UCC1Ad) and check appropriate box in item 18.
2. If an additional Debtor is included, complete item 2, determined and formatted per Instruction 1. To include further additional Debtors, attach either Addendum (Form UCC1Ad) or Additional Party (Form UCC1AP) and follow Instruction 1 for determining and formatting additional names.
 3. Enter information for Secured Party or Total Assignee, determined and formatted per Instruction 1. To include further additional Secured Parties, attach either Addendum (Form UCC1Ad) or Additional Party (Form UCC1AP) and follow Instruction 1 for determining and formatting additional names. If there has been a total assignment of the Secured Party's interest prior to filing this form, you may either (1) enter Assignor S/P's name and address in item 3 and file an Amendment (Form UCC3) [see item 5 of that form]; or (2) enter Total Assignee's name and address in item 3 and, if you wish, also attaching Addendum (Form UCC1Ad) giving Assignor S/P's name and address in item 12.
 4. Use item 4 to indicate the collateral covered by this Financing Statement. If space in item 4 is insufficient, put the entire collateral description or continuation of the collateral description on either Addendum (Form UCC1Ad) or other attached additional page(s).
 5. If filer desires (at filer's option) to use titles of lessee and lessor, or consignee and consignor, or seller and buyer (in the case of accounts or chattel paper), or bailee and bailor instead of Debtor and Secured Party, check the appropriate box in item 5. If this is an agricultural lien (as defined in applicable Commercial Code) filing or is otherwise not a UCC security interest filing (e.g., a tax lien, judgment lien, etc.), check the appropriate box in item 5, complete items 1-7 as applicable and attach any other items required under other law.
 6. If this Financing Statement is filed as a fixture filing or if the collateral consists of timber to be cut or as-extracted collateral, complete items 1-5, check the box in item 6, and complete the required information (items 13, 14 and/or 15) on Addendum (Form UCC1Ad).
 7. This item is optional. Check appropriate box in item 7 to request Search Report(s) on all or some of the Debtors named in this Financing Statement. The Report will list all Financing Statements on file against the designated Debtor on the date of the Report, including this Financing Statement. There is an additional fee for each Report. If you have checked a box in item 7, file Search Report Copy together with Filing Officer Copy (and Acknowledgment Copy). Note: Not all states do searches and not all states will honor a search request made via this form; some states require a separate request form.
 8. This item is optional and is for filer's use only. For filer's convenience of reference, filer may enter in item 8 any identifying information (e.g., Secured Party's loan number, law firm file number, Debtor's name or other identification, state in which form is being filed, etc.) that filer may find useful.

UCC FINANCING STATEMENT ADDENDUM

FOLLOW INSTRUCTIONS (front and back) CAREFULLY

9. NAME OF FIRST DEBTOR (1a or 1b) ON RELATED FINANCING STATEMENT

9a. ORGANIZATION'S NAME

Graham County Electric Cooperative, Inc.

OR

9b. INDIVIDUAL'S LAST NAME

FIRST NAME

MIDDLE NAME, SUFFIX

10. MISCELLANEOUS:

THE ABOVE SPACE IS FOR FILING OFFICE USE ONLY

11. ADDITIONAL DEBTOR'S EXACT FULL LEGAL NAME - insert only one name (11a or 11b) - do not abbreviate or combine names

11a. ORGANIZATION'S NAME

OR

11b. INDIVIDUAL'S LAST NAME

FIRST NAME

MIDDLE NAME

SUFFIX

11c. MAILING ADDRESS

CITY

STATE

POSTAL CODE

COUNTRY

11d. **SEE INSTRUCTIONS**

ADD'L INFO RE
ORGANIZATION
DEBTOR

11e. TYPE OF ORGANIZATION

11f. JURISDICTION OF ORGANIZATION

11g. ORGANIZATIONAL ID #, if any

☐ NONE

12. ☐ ADDITIONAL SECURED PARTY'S or ☐ ASSIGNOR S/P'S NAME - insert only one name (12a or 12b)

12a. ORGANIZATION'S NAME

OR

12b. INDIVIDUAL'S LAST NAME

FIRST NAME

MIDDLE NAME

SUFFIX

12c. MAILING ADDRESS

CITY

STATE

POSTAL CODE

COUNTRY

13. This FINANCING STATEMENT covers ☐ timber to be cut or ☐ as-extracted collateral, or is filed as a ☐ fixture filing.

14. Description of real estate:

16. Additional collateral description:

15. Name and address of a RECORD OWNER of above-described real estate (if Debtor does not have a record interest):

17. Check only if applicable and check only one box.

Debtor is a ☐ Trust or ☐ Trustee acting with respect to property held in trust or ☐ Decedent's Estate

18. Check only if applicable and check only one box.

☒ Debtor is a TRANSMITTING UTILITY

☐ Filed in connection with a Manufactured-Home Transaction

☐ Filed in connection with a Public-Finance Transaction

International Association of Commercial Administrators (IACA)

Instructions for UCC Financing Statement Addendum (Form UCC1Ad)

9. Insert name of first Debtor shown on Financing Statement to which this Addendum relates, exactly as shown in item 1 of Financing Statement.
10. Miscellaneous: Under certain circumstances, additional information not provided on Financing Statement may be required. Also, some states have non-uniform requirements. Use this space to provide such additional information or to comply with such requirements; otherwise, leave blank.
11. If this Addendum adds an additional Debtor, complete item 11 in accordance with Instruction 1 of Financing Statement. To include further additional Debtors, attach either an additional Addendum (Form UCC1Ad) or Additional Party (Form UCC1AP) and follow Instruction 1 of Financing Statement for determining and formatting additional names.
12. If this Addendum adds an additional Secured Party, complete item 12 in accordance with Instruction 3 of Financing Statement. To include further additional Secured Parties, attach either an additional Addendum (Form UCC1Ad) or Additional Party (Form UCC1AP) and follow Instruction 1 of Financing Statement for determining and formatting additional names. In the case of a total assignment of the Secured Party's interest before the filing of this Financing Statement, if filer has given the name and address of the Total Assignee in item 3 of Financing Statement, filer may give the Assignor S/P's name and address in item 12.
- 13-15. If collateral is timber to be cut or as-extracted collateral, or if this Financing Statement is filed as a fixture filing, check appropriate box in item 13; provide description of real estate in item 14; and, if Debtor is not a record owner of the described real estate, also provide, in item 15, the name and address of a record owner. Also provide collateral description in item 4 of Financing Statement. Also check box 6 on Financing Statement. Description of real estate must be sufficient under the applicable law of the jurisdiction where the real estate is located.
16. Use this space to provide continued description of collateral, if you cannot complete description in item 4 of Financing Statement.
17. If Debtor is a trust or a trustee acting with respect to property held in trust or is a decedent's estate, check the appropriate box.
18. If Debtor is a transmitting utility or if the Financing Statement relates to a Manufactured-Home Transaction or a Public-Finance Transaction as defined in the applicable Commercial Code, check the appropriate box.

FIVE YEAR CONSTRUCTION WORK PLAN

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

ARIZONA 17 GRAHAM

Pima, Arizona

FIVE YEAR CONSTRUCTION WORK PLAN 2010 - 2014



SGS
ENGINEERING, LLC

I hereby certify that this 2010-2014 Construction Work Plan was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the Arizona.

12/2/09
Date

Michael L. Smith
Michael L. Smith



This Seal Appearing on this document was authorized by Michael L. Smith, PE 28688, December 2, 2010

Michael L. Smith
Exp: 3/31/2010

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Graham County Electric Cooperative, Inc.

ARIZONA 17 GRAHAM
Pima, Arizona



**FIVE YEAR WORK PLAN
2010 – 2014**

SGS
ENGINEERING, LLC

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This Construction Work Plan has been prepared at the request of the management of the Graham County Electric Cooperative, Inc. (Arizona 17 Graham) of Pima, Arizona. The primary purpose of this Work Plan is to provide the Cooperative with estimated construction costs as well as an overall construction program. Graham County receives power from AEPCO. This Construction Work Plan will recommend changes that are necessary in order to provide continued efficient and adequate electric service to all the Cooperative's consumers throughout the planning period. This Work Plan will provide basic data for use in the preparation of the annual budget and to support a request for additional loan funds that might be required from an outside source.

A. Losses

At the end of 2008, Graham County's electric system had 1,208 miles of energized line and total system kWh sales of 145,210,674 for the calendar year, which equates to 120,207 kWh / mile. RUS Bulletin 45-4, "Guidelines for Distribution System Energy Losses" indicates that 8.2% system losses are average for kWh sales per mile in this range. Cooperative records indicate that system losses for 2008 were 8.40%. Table I-1 shows losses for the past five year period starting in 2004. Several projects proposed in this work plan will reduce distribution losses on the system.

Table I-1 – Energy Losses

YEAR	2004	2005	2006	2007	2008	5 YR AVG
Energy Losses %	8.24%	8.73%	8.86%	8.55%	7.61%	8.40%

B. Outages

The average outage hours per consumer over the past five years are 2.95. This figure is under the RUS recommended guideline of 5.00. The last five year history is shown in Table I-2.

Table I-2 – Outage Hours per Consumer

YEAR	2004	2005	2006	2007	2008	5 YR AVG
POWER SUPPLIER	-	-	-	-	-	-
EXTREME STORM	0.96	2.62	2.37	2.18	0.43	1.71
PLANNED	-	-	-	-	-	-
ALL OTHER	2.05	1.43	0.61	1.57	0.54	1.24
TOTALS	3.01	4.05	2.98	3.75	0.97	2.95

C. Summary of Loan Funds

Table I-3 is a summary of costs for construction proposed in this work plan for Graham County Electric Cooperative. Construction costs are separated into eight categories, member extensions, replacements, distribution construction, substation construction, transmission construction, a total of all construction by year for all five years, total contributions, and a total of net loan funds.

Table I-3 – 2010-2014 Construction Work Plan Summaries

Year	2010	2011	2012	2013	2014	Total
Member Extensions	1,164,762	1,164,762	1,164,762	1,164,762	1,164,762	5,823,810
Replacements	487,100	487,100	487,100	487,100	487,100	2,435,500
Distribution	143,750	168,750	970,500	48,750	41,250	1,373,000
Substation	0	1,310,000	1,600,000	0	0	2,910,000
Transmission	144,700	144,700	144,700	144,700	144,700	723,500
Total	1,940,312	3,275,312	4,367,062	1,845,312	1,837,812	13,265,810
Contributions	(715,652)	(715,652)	(715,652)	(715,652)	(715,652)	(3,578,260)
Total (Net Loan Funds)	1,224,660	2,559,660	3,651,410	1,129,660	1,122,160	9,687,550

Supplemental 740c Attachment

Graham County Electric Cooperative, Inc.

2010 - 2014 Five Year Construction Work Plan

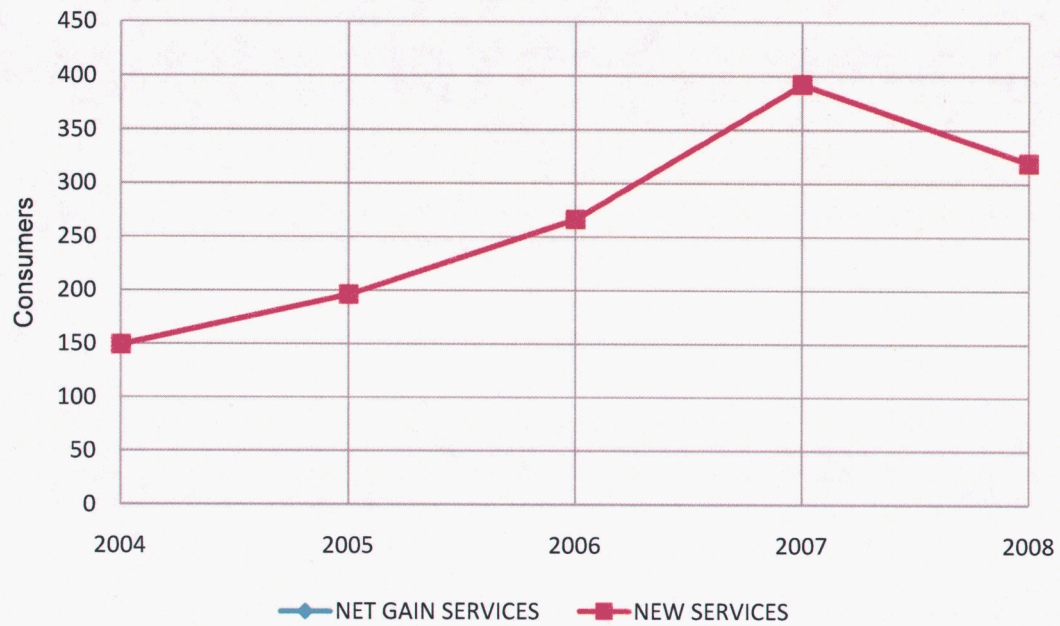
1 DISTRIBUTION FACILITIES		Loan Funds	Other Sources	General Funds	Total Costs
<u>New Line: (Excluding Tie Lines) - Series 100</u>					
101	Underground Consumers	\$402,876	\$492,404	\$0	\$895,280
102	Overhead Consumers	\$704,572	\$1056,858	\$0	\$1,761,430
<u>New Tie Lines - Series 200</u>					
200.07	Pima, North Fdrs. Add 0.75 mi of double ckt. 477 MCM ACSR @ \$75,000 per mi.	\$105,000	\$0	\$0	\$105,000
<u>Conversions and Line Changes - Series 300</u>					
300.15	Pima, North Fdr, Convert 125 mi. of 3Ø #6cu & #2 ACSR to 3Ø 477 MCM ACSR @ \$75,000 per mi.	\$93,750	\$0	\$0	\$93,750
300.16	Talley Sub, North Fdr, Convert 6.0 mi. of 3Ø #6cu & #2 ACSR to 3Ø 477 MCM ACSR	\$802,500	\$0	\$0	\$802,500
300.17	Swift Trails, Fdr 81000, Convert 2.3 mi. of 3Ø #6cu to 3Ø #4/0 ACSR @ \$60,000 per mi.	\$138,000	\$0	\$0	\$138,000
<u>New Substation, & Switching Station - Series 400</u>					
400.01	Pima Sub, New 69:7.2/12.5 kV 12/16/20 MVA Sub	\$1310,000	\$0	\$0	\$1310,000
400.02	Talley Sub, New 69:7.2/12.5 kV 12/16/20 MVA Sub	\$1600,000	\$0	\$0	\$1600,000
<u>Miscellaneous Distribution Equipment - Series 600</u>					
601	1440 Transformers (Over Head)	\$0	\$1512,000	\$0	\$1512,000
601	220 Transformers (Pad Mounted)	\$0	\$517,000	\$0	\$517,000
601	960 Meters (Regular)	\$105,600	\$0	\$0	\$105,600
601	50 Meters (Special)	\$17,500	\$0	\$0	\$17,500
601	Automated Meter Reading	\$1000,000	\$0	\$0	\$1000,000
603	Various Sectionalizing Equipment System Wide	\$150,000	\$0	\$0	\$150,000
604	Cork, Fdr 1100, Relocate 3 - 150 amp Regulators	\$2,500	\$0	\$0	\$2,500
604	Talley, East Fdr, Relocate 3 - 200 amp Regulators	\$2,500	\$0	\$0	\$2,500
605	Cork Incr. 300 to 450 - LE of 1208 @ \$25/kVAR	\$3,750	\$0	\$0	\$3,750
605	Talley 300 kVAR - LE of 3417 @ \$25/kVAR	\$7,500	\$0	\$0	\$7,500
605	Talley Incr. to 900 - LE of 3410 @ \$25/kVAR	\$22,500	\$0	\$0	\$22,500
605	Plant 450 kVAR - LE 2004 @ \$25/kVAR	\$11,250	\$0	\$0	\$11,250
605	Plant 450 kVAR - LE 2032a @ \$25/kVAR	\$11,250	\$0	\$0	\$11,250
605	Plant 300 kVAR - SE 3301 @ \$25/kVAR	\$7,500	\$0	\$0	\$7,500
605	San Jose 450 kVAR - LE of 4004 @ \$25/kVAR	\$11,250	\$0	\$0	\$11,250
605	San Jose Incr. to 450 - LE of 4006 @ \$25/kVAR	\$3,750	\$0	\$0	\$3,750
606	1000 Distribution Poles @ \$1700 each	\$1700,000	\$0	\$0	\$1700,000
606	125 Distribution Crossarms @ \$360 each	\$45,000	\$0	\$0	\$45,000
606	125 Guys & Anchors @ \$140 each	\$17,500	\$0	\$0	\$17,500
606	Transformers @ \$180 each	\$590,000	\$0	\$0	\$590,000
606	250 Arrestors @ \$220 each	\$55,000	\$0	\$0	\$55,000
606	200 Cutouts @ \$140 each	\$28,000	\$0	\$0	\$28,000
<u>Other Distribution Items - Series 700</u>					
702	150 new installations @ \$100 each	\$15,000	\$0	\$0	\$15,000
<u>New Transmission Line - Series 800</u>					
<u>New Station / Switching Station - Series 900</u>					
<u>Other Transmission Items - Series 1100</u>					
1103	200 Pole Replacements @ \$3440 each	\$688,000	\$0	\$0	\$688,000
1103	50 crossarm Replacements @ \$710 each	\$35,500	\$0	\$0	\$35,500
TOTALS: 2010 - 2014 CONSTRUCTION WORK PLAN		\$9,687,548	\$3,578,262	\$0	\$13,265,810

This section of the report will provide a review of past experiences in regard to consumer growth, power usage and costs, substation capacity, system losses, and outages and service reliability. Graham County Electric Cooperative provided this data. Other sections of the report will detail voltage drop, feeder losses, power factor, system coordination, and construction costs.

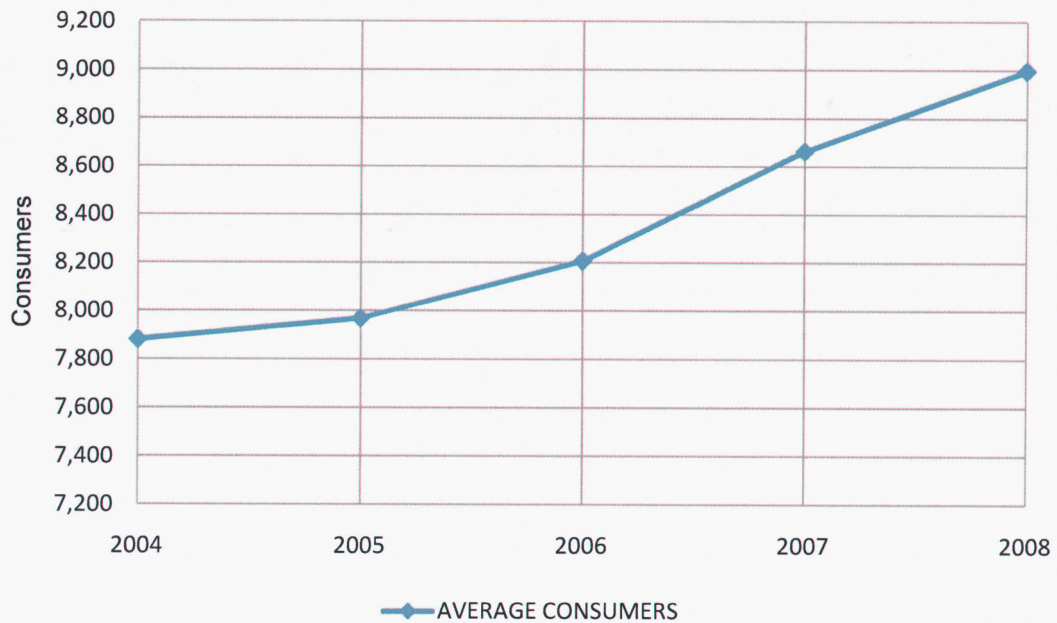
A. Consumer, kW, and kWh Data

In 2008, Graham County Electric Cooperative provided electric service to an average of 7,233 residential consumers using an average of 830 kWh per month; 648 irrigation consumers; 765 commercial consumers, 3 public street and highway lighting, and 15 large commercial users. For the past two year period, the Cooperative has connected 711 new services or about 355 new services per year.

New Consumers

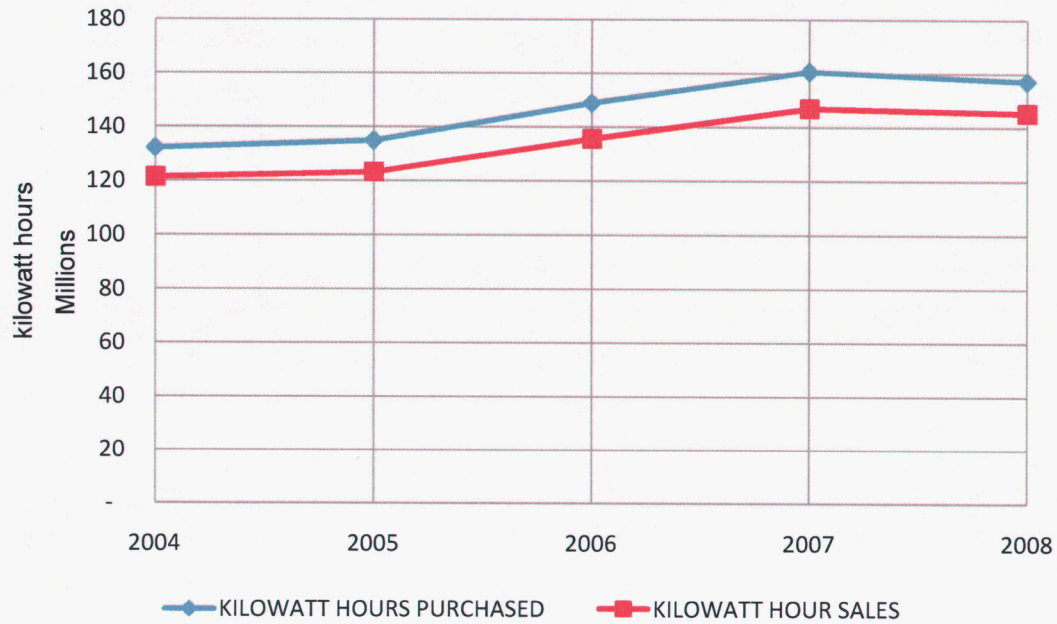


Average Consumers

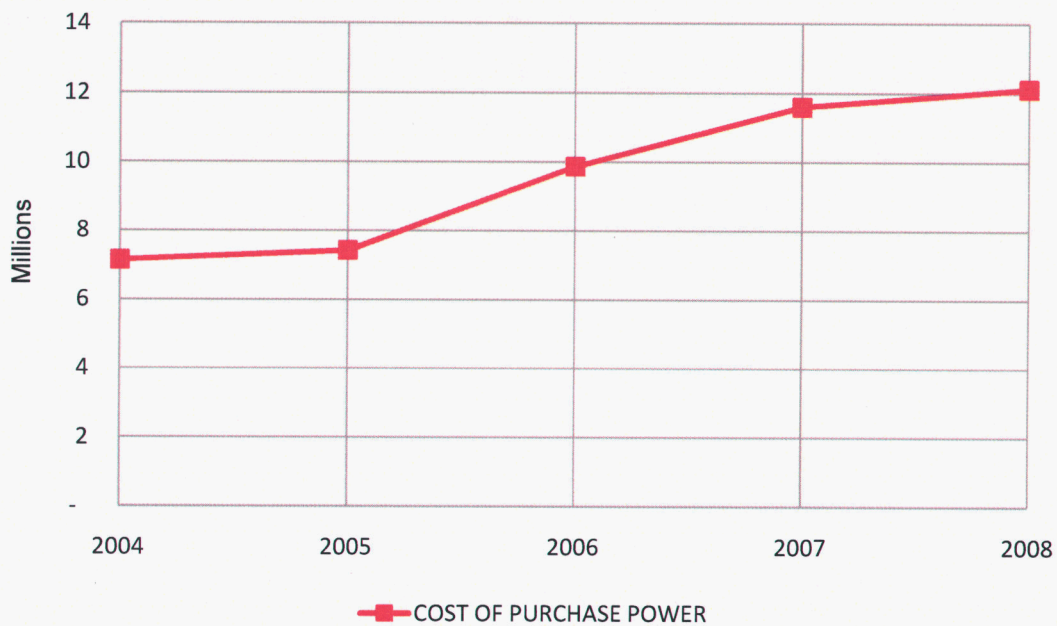


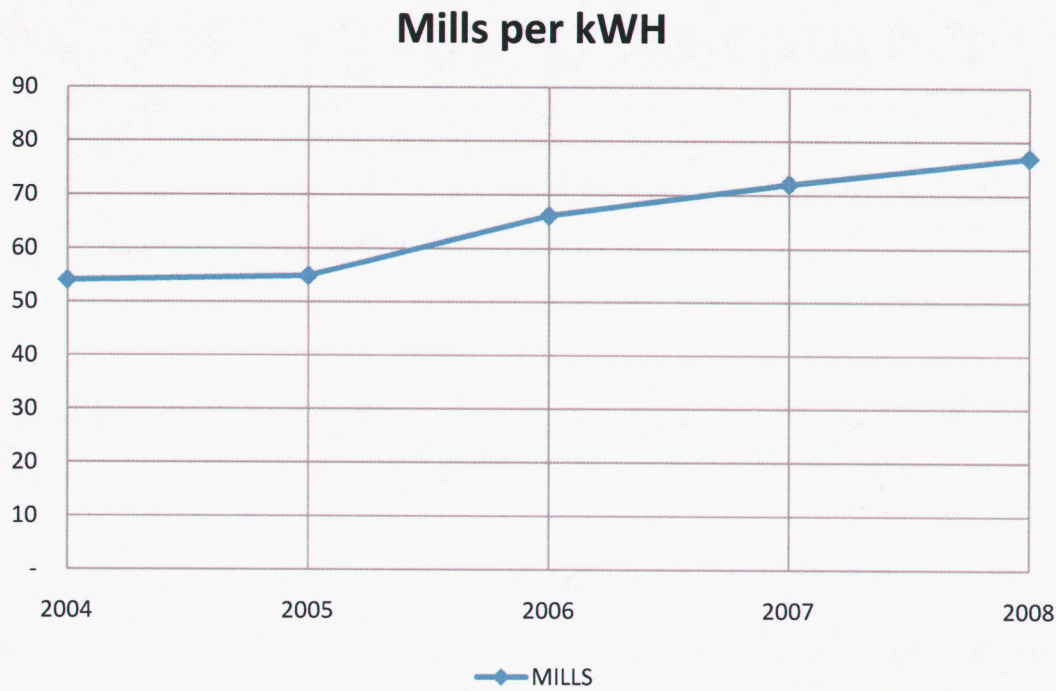
Purchases and sales of electric power have steadily increased over the past five-year period. Purchases in 2004 were 132.3 GWh and in 2008 were 157.2 GWh.

kWH Purchases & Sales



Cost of Purchases





Losses on the system reached a high of 8.86% in 2006 and the low occurred in 2008 of 7.61%. Table I-1 in the previous section shows the percent losses over the past five year period.

Losses in Percent



Cost of Losses



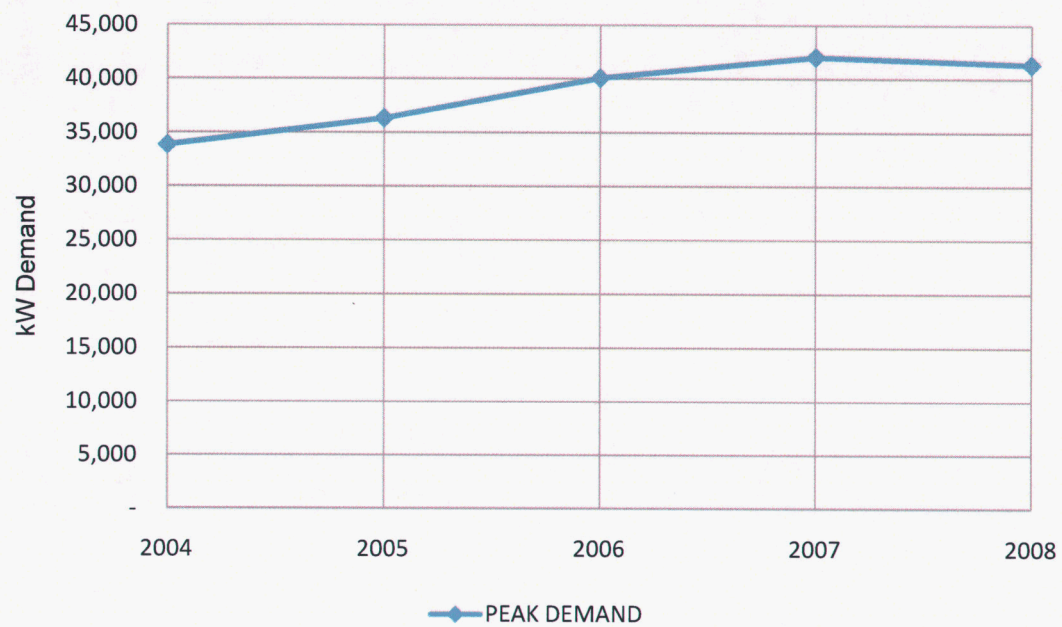
Several corrective measures have been implemented by the Cooperative to help reduce losses on their system. Typical measures are listed below:

1. Disconnecting or removing distribution transformers that are not serving loads if it is economical to do so.
2. Transformers are prevented from being over-excited by maintaining proper voltage and correct tap connections.
3. Good load balancing on three-phase lines is maintained to keep losses at a minimum.
4. Capacitors are used to provide voltage support, power factor correction and reduce line losses due to a reduction in line current.
5. Metering for commercial and industrial consumers is checked for proper connections, registration, and multipliers. Employees are alert for bypassing or tampering with meters.
6. Conductors and transformers are sized to properly serve loads economically.

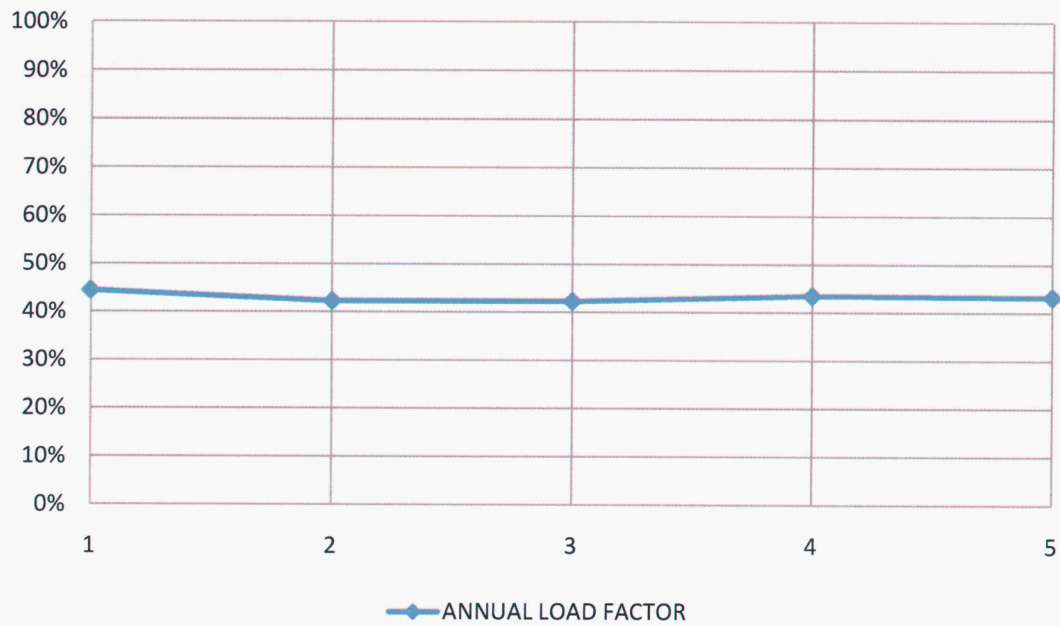
Power costs have increased dramatically recently and keeping losses down is an important factor in overall operations of electric systems. Reducing these losses should remain a primary concern to the Cooperative.

The system peak of 42.1 MW occurred in July of 2007. The chart below shows the peaks from 2004 to 2008.

System Peak Demand



System Load Factor



B. Substation Load Data

The system peak of 42.1 MW occurred in July 2007. Table II-1 lists the peak loading data for 2007. It shows present transformer capacities and voltages at each substation. Loads are shown in kW, power factor, and kVA. Percents are shown for the amount of capacity used at each substation.

Table II - 1 Present Peak Substation Loading

SUBSTATIONS	VOLTAGE kV	CAPACITY MVA	PEAK kW	PEAK PF	PEAK kVA	CAPACITY USED
Cactus	69-12.47/7.2	10,000	6,261	99.11%	6,317	63.17%
Cork	69-12.47/7.2	12,000	6,360	99.80%	6,373	53.11%
Freeman	69-12.47/7.2	10,000	8,046	99.79%	8,063	80.63%
Hooker	69-24.94/14.4	5,000	1,130	93.54%	1,208	24.16%
Plant	69-12.47/7.2	10,000	10,082	97.04%	10,390	103.90%
San Jose	69-12.47/7.2	12,000	6,281	99.01%	6,344	52.87%
Swift Trails	69-12.47/7.2	12,000	5,254	99.15%	5,299	44.16%
GRAND TOTALS		71,000	43,414		43,994	

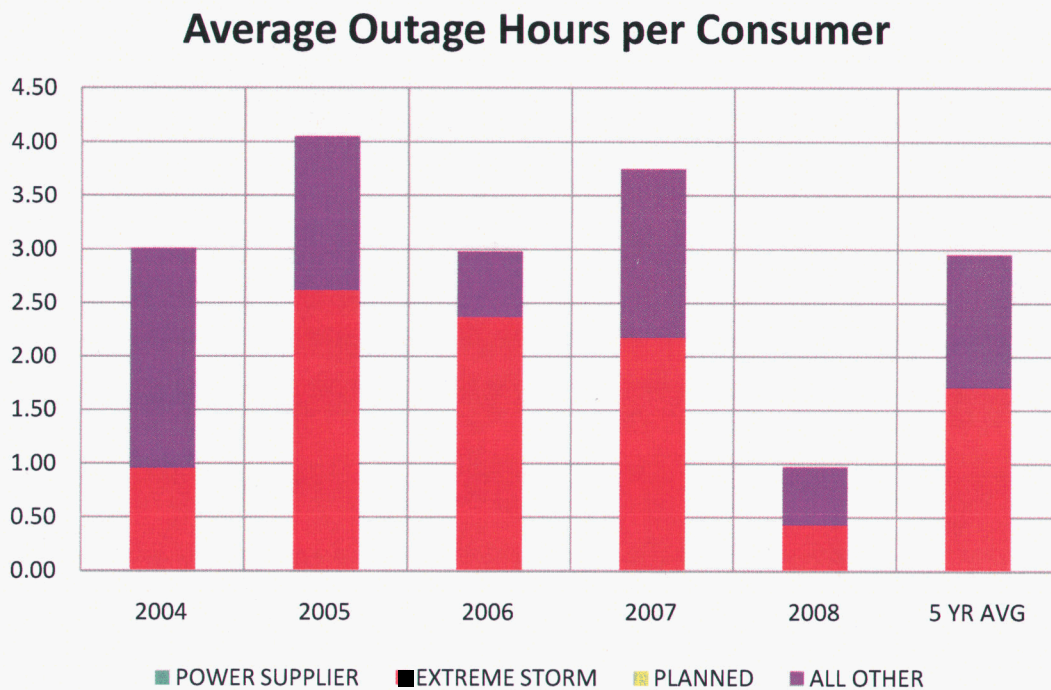
C. Load Current and Voltage Measurements

The Cooperative provided substation and circuit metering data for all substations by month for the years 2002 to 2008.

D. System Outages and Reliability

The Cooperative has maintained an average of 2.95 outage-hours per consumer over the past five years.

The following chart depicts outage hours per consumer. The outage hours per consumer are broken into four categories. These categories are power supplier, extreme storm, scheduled, and all other. Table I-2 in the Executive Summary also shows the outage hours in numerical format for the past five-year period ending in 2008.



A. Sectionalizing Study

A new sectionalizing study should be done in the near future with both Talley & Pima Substations being built in the next couple of years. Once these substations have started construction a new study should be done.

A. Design Criteria

In 2014, GCEC will provide electric service to an average of 8,182 residential consumers using an average of 856 kWh per month; 627 irrigation consumers; 3,528 commercial consumers, 13 large commercial users, and 3 public street lighting consumers. For the past two year period, the Cooperative has connected 711 new services or about 355 new services per year. This CWP is projecting a net gain of 1,000 consumers. The Work Plan Design Data sheet depicts the projected load additions anticipated during the planning period.

Table IV-1: Work Plan Design Data

Consumer Classification	Actual 2007 Data (Year Ending)			Projected Mid 2014 Requirements				
	Number of Cons.	kWh/Mo/ Cons.	kWh per Year	Number of Cons.	kWh/Mo/ Cons.	kWh per Year	2014 Net Cons. Gain	2014 New Connects
Residential	7,233	830	72,040,680	8,182	856	84,045,504	949	949
Domestic Sub-Total	7,233	830	72,040,680	8,182	856	84,045,504	949	949
Commercial <= 350 kVA	765	3,258	29,908,440	839	3,528	35,519,904	74	74
Irrigation	648	2,156	16,765,056	627	2,156	16,221,744	(21)	(21)
Public St & Hwy Lighting	3	3,575	128,700	3	3,575	128,700		
Commercial > 350 kVA	15	169,514	30,512,520	13	196,784	30,698,304	(2)	(2)
Non Domestic Sub-Total	1,431		77,314,716	1,482		82,568,652	51	51
Total Sales			149,355,396			166,614,156		
System Losses			15,496,034			14,488,187		
Grand Totals	8,664		164,851,430	9,664		181,102,343	1,000	1,000
Percent System Losses			9.40%			8.00%		
Sum of Substation Peak kW Demand			43,381			52,946		
System Coincident Peak kW Demand			42,071			51,372		

B. Member Extensions and Ordinary Replacements

Member extensions were estimated based on projections from the previous work plan. This estimation was based on inflation and proportionate to projected consumer growth. This chart also shows the breakdown of member extension money into overhead and underground requirements for line, as well as transformer, meter, replacements, and security light projections and requirements.

Table IV-2: COMPARISONS OF MEMBER EXTENSION & REPLACEMENTS - Mid 2010 - Mid 2014 CWP

AZ 17 GCEC		Previous CWP Projections				2010-2014 CWP Projections				
						Inflation =	4.50%	Avg =	14.34%	
Member Extensions	Quan.	Avg. Cost	Type	Total		Quan.	Avg. Cost	Type	Total	
10 UG Consumers	316	\$49,879	Tot.	\$660,897		248	\$57,100	Tot.	\$593,840	
10 UG Quantity	13.3 mi.	\$11,260	Loan	\$149,195		10.4 mi.	\$12,900	Loan	\$193,381	
			Cont	\$511,702				Cont	\$400,459	
30 UG Consumers	15	\$164,692	Tot.	\$326,090		12	\$188,400	Tot.	\$301,440	
30 UG Quantity	2.0 mi.	\$76,654	Loan	\$151,775		16 mi.	\$87,700	Loan	\$209,495	
			Cont	\$174,315				Cont	\$91,945	
10 OH Consumers	907	\$32,414	Tot.	\$1,606,114		711	\$37,100	Tot.	\$1,443,190	
10 OH Quantity	49.6 mi.	\$16,181	Loan	\$801,769		38.9 mi.	\$18,600	Loan	\$577,749	
			Cont	\$804,345				Cont	\$865,441	
30 OH Consumers	37	\$27,201	Tot.	\$354,701		29	\$31,200	Tot.	\$318,240	
30 OH Quantity	13.0 mi.	\$18,411	Loan	\$240,079		10.2 mi.	\$21,100	Loan	\$126,823	
			Cont	\$114,622				Cont	\$191,417	
Sub-Total Cons	1275	\$37,880	Tot.	\$2,947,802		1000	\$43,500	Tot.	\$2,656,710	
OH & UG Quantity	77.8 mi.	\$17,255	Loan	\$1,342,818		611 mi.	\$18,000	Loan	\$1,107,448	
			Cont	\$1,604,984				Cont	\$1,549,262	
Avg per Consumer =	322	feet for		\$2,312.00		323	feet for		\$2,657.00	
Special Equipment	Quan.	Avg. Cost		Total		Quan.	Avg. Cost		Total	
OH Transformers	1827	\$915		\$1,671,705		1440	\$1,050		\$1,512,000	
							(Fully Contributed)		\$1,512,000	
UG Transformers	276	\$2,055		\$567,180		220	\$2,350		\$517,000	
							(Fully Contributed)		\$517,000	
Meters - Regular	1223	\$94		\$114,962		960	\$110		\$105,600	
Meters - Special	52	\$301		\$15,652		50	\$350		\$17,500	
Meters - AMR	N/A	N/A		N/A		4,000	\$250		\$1,000,000	
Security Lights	330	\$251		\$82,830		150	\$100		\$15,000	
Sub-Total - Sp. Equip.				\$2,452,329				Tot.	\$3,167,100	
								Loan	\$1,138,100	
								Cont	\$2,029,000	
Distribution Replacements	Quan.	Avg. Cost		Total		Quan.	Avg. Cost		Total	
Dist. Poles	1500	\$1,482		\$2,223,000		1000	\$1,700		\$1,700,000	
Dist. Crossarms	125	\$307		\$38,375		125	\$360		\$45,000	
Guys & Anchors	125	\$121		\$15,125		125	\$140		\$17,500	
Transformers						500	\$1,180		\$590,000	
Arrestors	250	\$187		\$46,750		250	\$220		\$55,000	
Cutouts	200	\$121		\$24,200		200	\$140		\$28,000	
Dist. Replacements Total				\$2,347,450					\$2,435,500	
Transmission Replacements	Quan.	Avg. Cost		Total		Quan.	Avg. Cost		Total	
Trans. Poles	250	\$3,000		\$750,000		200	\$3,440		\$688,000	
Trans. Crossarms	175	\$620		\$108,500		50	\$710		\$35,500	
Trans. Replacements Total				\$858,500					\$723,500	

GRAND TOTALS

Total Cost \$8,606,081
 Loan Funds \$7,001,097
 Contributions \$1,604,984

Total Cost \$8,982,810
 Loan Funds \$5,404,548
 Contributions \$3,578,262

C. Substation Area Analysis and System Improvements

This section of the report will examine voltage drop, losses, and conductor loading experienced on the system during the peak month of July 2007. These same conditions will be examined for the projected peak demand in 2014. Potential new large power loads and new consumer growth were added to the past peak to develop the expected peak demand in 2014.

Table IV-3 lists the estimated peak loading data for the year 2014 on each existing substation. It shows transformer capacities and rated voltages at each substation. Loads are shown in kW, power factor, and kVA. Percents are shown for the amount of capacity used.

Table IV - 3 Existing System Projected Peak Substation Loading

SUBSTATIONS	VOLTAGE kV	CAPACITY MVA	PEAK kW	PEAK PF	PEAK kVA	CAPACITY USED
Cactus	69-12.47/7.2	10,000	7,597	98.78%	7,691	76.91%
Cork	69-12.47/7.2	12,000	7,834	98.93%	7,919	65.99%
Freeman	69-12.47/7.2	10,000	10,297	99.13%	10,387	103.87%
Hooker	69-24.94/14.4	5,000	2,661	95.93%	2,774	55.48%
Plant	69-12.47/7.2	10,000	12,898	95.70%	13,478	134.78%
San Jose	69-12.47/7.2	12,000	7,601	97.26%	7,815	65.12%
Swift Trails	69-12.47/7.2	12,000	6,378	98.26%	6,491	54.09%
GRAND TOTALS		71,000	55,266		56,555	

Table IV-4 lists the estimated peak loading data for the projected system with the projected load for the year 2014 on each substation with the addition of the new Pima and Talley Substations. It shows transformer capacities and rated voltages at each substation. Loads are shown in kW, power factor, and kVA. Percents are shown for the amount of capacity used.

Table IV - 4 Projected System Projected Peak Substation Loading

SUBSTATIONS	VOLTAGE kV	CAPACITY MVA	PEAK kW	PEAK PF	PEAK kVA	CAPACITY USED
Cactus	69-12.47/7.2	10,000	7,598	99.76%	7,616	76.16%
Cork	69-12.47/7.2	12,000	4,771	99.97%	4,773	39.77%
Freeman	69-12.47/7.2	10,000	10,327	99.75%	10,353	103.53%
Hooker	69-24.94/14.4	5,000	2,645	95.93%	2,757	55.14%
Pima	69-12.47/7.2	12,000	5,211	97.44%	5,348	44.57%
Plant	69-12.47/7.2	10,000	5,661	98.32%	5,758	57.58%
San Jose	69-12.47/7.2	12,000	6,747	99.44%	6,785	56.54%
Swift Trails	69-12.47/7.2	12,000	6,379	98.29%	6,490	54.08%
Talley	69-12.47/7.2	12,000	5,447	99.28%	5,487	45.72%
GRAND TOTALS		95,000	54,786		55,367	

Table IV-5 shows a chart that summarizes the voltage conditions, load flows, losses, and conductor loading for each circuit on the distribution system. These quantities are given for the present system (mid 2010), present system with projected loading (mid 2014) and the projected system (mid 2014). This provides a side-by-side comparison of loading, losses, conductor loading, and voltage drop. This provides a good indication of the economics of line conversion. Lines loaded from 50% to 60% of their ampacity ratings may be economical to convert on Graham County's system. This is mainly determined by the cost of construction and power losses. Voltage drops on the chart show the maximum regulated drops on the circuit determined by power flow analyses. Regulated voltage drop should be 8.0 volts or less for each circuit.

Table IV-5 2010-2014 Construction Work Plan Circuit Summary

Substation	Fdr.	Feeder Loading in kW			Feeder Loading in kVAR			kW Losses			Heaviest Loaded Conductor			Max Voltage Drop (120 Volt Base)		
		Exist. Sys.	Exist. Sys.	Proj. Sys.	Exist. Sys.	Exist. Sys.	Proj. Sys.	Exist. Sys.	Exist. Sys.	Proj. Sys.	Exist. Sys.	Exist. Sys.	Proj. Sys.	Exist. Sys.	Exist. Sys.	Proj. Sys.
		2009 Load	2013 Load	2013 Load	2009 Load	2013 Load	2013 Load	2009 Load	2013 Load	2013 Load	2009 Load	2013 Load	2013 Load	2009 Load	2013 Load	2013 Load
Cactus	5000	641	779	779	152	185	185	3	5	5	13%	15%	15%	1.1	1.3	1.3
	5100	4,829	5,857	5,881	833	784	130	97	143	144	36%	44%	44%	4.0	5.3	4.7
	5200	792	962	962	-143	228	-102	2	3	3	30%	37%	37%	1.1	1.4	1.4
Cork	1000	2,788	3,427	482	35	390	-462	176	269	4	85%	103%	13%	9.7	12.9	0.3
	100	2,704	3,348	3,222	273	569	164	238	368	211	44%	56%	44%	10.1	12.0	6.6
	1200	879	1,068	1,068	111	207	207	15	23	23	28%	34%	34%	3.6	4.4	4.4
Freeman	7100	2,422	2,938	2,942	230	674	256	30	46	44	38%	48%	48%	2.5	3.4	3.3
	7200	4,904	6,484	6,511	146	491	175	94	166	164	39%	50%	49%	3.0	4.2	3.6
	7300	720	875	875	164	201	201	8	12	12	14%	17%	17%	1.8	2.1	2.1
Hooker	Bonita	972	2,429	2,429	369	697	697	11	81	81	15%	34%	34%	10.8	10.8	10.8
	Klondyke	151	216	216	57	82	82	1	2	2	3%	4%	4%	6.3	2.3	6.1
Pima	North	0	0	2,786	0	0	536	0	0	18	0%	0%	40%	0.0	0.0	3.0
	East	0	0	2,433	0	0	163	0	0	46	0%	0%	47%	0.0	0.0	6.3
Talley		0	0	5,447	0	0	659	0	0	46	0%	0%	25%	0.0	0.0	4.4
Plant	2000	4,405	5,577	2,997	1,427	2,201	516	209	342	64	65%	85%	43%	7.8	10.5	3.8
	2100	1,809	2,573	2,573	16	478	480	10	21	25	26%	37%	37%	1.3	2.0	2.3
	2200	3,917	4,765	92	964	1,233	52	82	121	0	27%	33%	1%	4.2	5.0	0.1
San Jose	4000	1,813	2,200	1,954	257	565	-124	25	39	31	27%	32%	32%	3.4	4.3	3.7
	4100	3,847	4,646	4,039	547	1,073	654	71	108	73	26%	33%	28%	5.6	7.4	5.7
	4300	621	755	755	88	178	178	2	2	2	14%	17%	17%	0.4	0.5	0.5
Swift Trails	8000	1,414	1,717	1,717	247	376	376	12	19	19	40%	49%	49%	3.7	6.0	4.6
	8100	2,848	3,455	3,455	187	454	448	48	71	42	44%	53%	34%	5.1	6.0	3.2
	8200	993	1,206	1,206	251	377	377	1	1	1	21%	25%	25%	0.1	0.2	0.2

Sample power flows for the existing system with projected loading and projected system and loading are in Appendices A1 & A2. The first sample is projected system loading on the existing system. The second sample reflects projected system loading with the recommended system improvements in place. The remaining paragraphs in this report will discuss the problem areas and proposed system improvements. These discussions are in alphabetical order.

1. Cactus Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 7,597 kW. Peak kVA is projected to be 7,691 kVA or 77% of its rated 10 MVA base capacity. No system improvements are anticipated during this work plan period.

2. Cork Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 7,834 kW. Peak kVA is projected to be 7,919 kVA or 66% of its rated 12 MVA capacity. After the Pima Substation is built the peak kVA will be 4,773 kVA or 40% of rated capacity.

On feeder 1000, projected voltage drop calculations indicated problems of excessive voltage drop beyond line section 1004a (approximately 12.9 volts worst case) with capacity problems approximately 103% worst case of rated capacity on 4.2 miles of #2 HdCu and #6 HdCu conductor on line sections 1004, 1060, 1005, 1030, 1008, and 1016. We suggest shifting approximately 2,782 kW on line section 1005 and beyond to the north feeder of the Pima Substation. This should reduce voltage drop to an acceptable level of 0.3 volts worst case and reduce loading on the 4.2 miles of conductor to 13% worst case.

On feeder 1100, projected voltage drop calculations indicated problems of excessive voltage drop beyond line section 1202 (approximately 12.6 volts worst case) with capacity problems approximately 56% worst case of rated capacity on 1.2 miles of #6 HdCu conductor on line sections 1270, and OH1424. We recommend increasing the 300 kVAR switched capacitor at the load end of line section 1208 to 450 kVAR, re-locating 3 – 150 amp regulators from the source end of line section 1270 to the load end of line section 1276a, and converting 5.3 miles of 3Ø #6 HdCu to 3Ø #4/0 ACSR on line sections 1224, 1272, 1270, OH1424, and 1222. This conversion will be done using funds from the current loan and will return the maximum voltage drop in this area to an appropriate level of roughly 6.6 volts and conductor loading to 48% worst case.

Summary of Construction, Cork Substation Service Area

604	1 st Year, Fdr 1100, Relocate 3 – 150 amp voltage regulators	2,500
605	1 st Year, Fdr 1100, Increase 300 kVAR of switched capacitors to 450 kVAR at the load end of line section 1208 @ \$25 / kVAR	3,750
Sub-Total		6,250

3. Freeman Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 10,297 kW. Peak kVA is projected to be 10,387 kVA or 104% of its rated 10 MVA capacity. No system improvements are anticipated during this work plan period.

4. Hooker Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 2,661 kW. Peak kVA is projected to be 2,774 kVA or 55% of its rated 5 MVA capacity. No system improvements are anticipated during this work plan period.

5. Plant Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 12,898 kW. Peak kVA is projected to be 13,478 kVA or 135% of its rated 10 MVA capacity. With the addition of the new Pima and Talley substations the peak kVA will be 5,758 kVA or 58% of its rated capacity. To compensate for the new projected system load we recommend that 450 kVAR of switched capacitors be placed at the load end of line section 2004, 450 kVAR of switched capacitors be placed at the load end of line section 2032a, and 300 kVAR of switched capacitors be placed at the source end of line section 3301.

On feeder 2000, projected voltage drop calculations indicated problems of excessive voltage drop beyond line section 2004 (approximately 10.5 volts worst case) with capacity problems approximately 85% worst case of rated capacity on the #1/0 HdCu and #6 HdCu conductor on line sections 2004, and 2032. We recommend that a new substation be constructed (Pima Sub) and approximately 2,468 kW of load will be shifted to the new substation. This should return voltage drop to appropriate levels of 3.8 volts worst case and maximum loading to 43%.

On feeder 2100, the cooperative will be building a new substation (Talley Sub) at the load end of line section 3406 to compensate for the new projected system load and increase the reliability in this service area north of the Gila River.

Summary of Construction, Plant Substation Service Area

605	2 nd Year, Fdr 2000, Add 450 kVAR of switched capacitors at the load end of line section 2004 @ \$25 / kVAR	11,250
605	4 th Year, Fdr 2000, Add 450 kVAR of switched capacitors at the load end of line section 2032a @ \$25 / kVAR	11,250
605	1 st Year, Fdr 2100, Add 300 kVAR of switched capacitors at the source end of line section 3301 @ \$25 / kVAR	7,500
Sub-Total		<hr/> 30,000

6. San Jose Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 7,601 kW. Peak kVA is projected to be 7,815 kVA or 65% of its rated 12 MVA capacity. With the addition of the new Pima and Talley substations the peak kVA will be 6,785 kVA or 57% of its rated capacity. We recommend increasing the 300 kVAR switched capacitor on the load end of line section 4006 to 450 kVAR and adding a 450 kVAR switched capacitor on the load end of line section 4004 to compensate for the new projected system load.

Summary of Construction, San Jose Substation Service Area

605	5 th Year, Fdr 4000, Add 450 kVAR of switched capacitors at the load end of line section 4004 @ \$25 / kVAR	11,250
605	1 st Year, Fdr 4000, Increase 300 kVAR of switched capacitors to 450 kVAR at the load end of line section 4006 @ \$25 / kVAR	3,750
Sub-Total		<hr/> 15,000

7. Swift Trails Substation Service Area

The load level of this substation service area projected for the 2010-2014 work plan period is approximately 6,378 kW. Peak kVA is projected to be 6,491 kVA or 54% of its rated 12 MVA capacity. To compensate for the new projected system load we recommend that 300 kVAR of switched capacitors be placed at the load end of line section 5236.

On Feeder 81000, projected voltage drop calculations indicated that the 3Ø #6 HdCu conductor on line section 5236 is loaded up to 53% of its rated capacity. We propose converting 2.3 miles of 3Ø #6 HdCu conductor to 3Ø #4/0 ACSR on line sections 5236 and 5238 which should reduce loading to 34% worst case. Appendix B indicates that the net present value shows moderate savings with this conversion.

Summary of Construction, Swift Trails Substation Service Area

300.17	3 rd Year, Fdr 81000, Convert 2.3 miles of 3Ø #6 HdCu to 3Ø #4/0 ACSR @ \$60,000 per mile	138,000
	Sub-Total	138,000

8. Pima Substation Service Area

We are recommending that a new 69:7.2/12.5 kV 12/16/20 MVA substation be built at the intersection of line section 2085 and line section OH1511 located on feeder 2000 in the existing Plant substation service area. This new substation will help to better serve the growth in this service area and eliminate significant voltage and capacity problems. It will also take load off of the Cork and Plant substations. We suggest converting 1.25 miles of 3Ø #6 HdCu & #2 HdCu to 3Ø 477 MCM ACSR on line sections 1012 and 1016 which will better facilitate the shifting of load to this new substation. In Appendix B the net present value shows this addition to be the best choice.

Summary of Construction, Pima Substation Service Area

300.15	1 st Year, North Fdr, Convert 1.25 miles of 3Ø #6 HdCu & #2 HdCu to 3Ø 477 MCM ACSR @ \$75,000 per mile	93,750
400.01	2 nd Year, Construct New 69:7.2/12.5 kV 12/16/20 MVA substation	1,310,000
Sub -Total		1,403,750

9. Talley Substation Service Area

The addition of this new 69:7.2/12.5 kV 12/16/20 MVA substation will improve reliability in the service area north of the Gila River. We recommend converting 10.7 miles of 3Ø #6 HdCu & #2 ACSR to 3Ø 477 MCM ACSR from the source end of line section 3412 to the load end of line section 4010, re-locating 3 – 200 amp regulators from the load end of line section 3408 to the load end of line section OH1420, adding 300 kVAR of switched capacitors to the load end of line section 3417, and increasing the 300 kVAR switched capacitor (CAP1397) from 300 kVAR to 900 kVAR. This new substation will help to better serve potential growth in this service area.

Summary of Construction, Talley Substation Service Area

300.16	3 rd Year, East Fdr, Convert 10.7 miles of 3Ø #6 HdCu & #2 ACSR to 3Ø 477 MCM ACSR @ \$75,000 per mile	802,500
400.02	3 rd Year, Construct New 69:7.2/12.5 kV 12/16/20 MVA substation	1,600,000
604	1 st Year, East Fdr, Relocate 3 – 150 amp voltage regulators	2,500
605	4 th Year, East Fdr, Add 300 kVAR of switched capacitors at the load end of line section 3417 @ \$25 / kVAR	7,500
605	2 nd Year, East Fdr, Increase 300 kVAR of switched capacitors to 900 kVAR at the load end of line section 3410 @ \$25 / kVAR	22,500
Sub-Total		2,435,000

D. Sectionalizing Study

A new sectionalizing study should be done in the near future with both Talley & Pima Substations being built in the next couple of years. Once these substations have started construction a new study should be done.

Summary of Construction, Sectionalizing Equipment

603	1/5 each Year, Purchase and Install	150,000
	miscellaneous Sectionalizing Equipment	

E. Transmission Improvements

Projected voltage drop calculations indicated no excessive voltage drop or capacity problems on the Transmission system.

1. City of Thatcher Switchyard

The cooperative wishes to add a 69 kV Switchyard Station in the City of Thatcher using funds from the current loan.

This section of the report lists the proposed construction anticipated for the 2010-2014 Construction Work Plan period. Construction items are found in the same order as found on RUS form 740c in "Cost Estimates and Loan Budget for Electric Borrowers". This is done to facilitate ease in identifying construction items in the loan application. Identifying numbers relate to the construction items and they are noted in this section of the report, on the form 740c, and the 740c Attachment. The following pages provide greater detail on all construction items proposed in this work plan. Construction costs shown are totals.

V. SUMMARY OF SYSTEM IMPROVEMENTS

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		2010	2011	2012	2013	2014	Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	Total
A. Distribution							
	1. New Member Line Extensions - 100						
101	a. Underground Consumers						
	260 consumers, 12 mi. of line,						
	Actual Cost of \$ 895,280						
	Contributions of \$ 492,404						
	12 mi. @ \$245,500/mi.	179,056	179,056	179,056	179,056	179,056	895,280
102	b. Overhead Consumers						
	740 consumers, 49.1mi. of line,						
	Actual Cost of \$ 1761430						
	Contributions of \$ 1056,858						
	49.1mi. @ \$68,300/mi.	352,286	352,286	352,286	352,286	352,286	1761430
	c. Total - New Construction	531,342	531,342	531,342	531,342	531,342	2,656,710
	Contributions	309,852	309,852	309,852	309,852	309,852	1,549,262
	Total - Loan Funds	221,490	221,490	221,490	221,490	221,490	1,107,448
	2. New Tie Lines - 200						
200.07	a. Pima, North Fdrs. Add 0.75 mi of double ckt 477		105,000				105,000
	MCM ACSR @ \$75,000 per mi.	0	105,000	0	0	0	105,000
	3. Conversion and Line Changes - 300						
300.15	a. Pima, North Fdr, Convert 125 mi. of 3Ø #6cu	93,750					93,750
	& #2 ACSR to 3Ø 477 MCM ACSR @ \$75,000 per mi.						
300.16	b. Talley, East Fdr, Convert 10.7 mi. of 3Ø #6cu			802,500			802,500
	& #2 ACSR to 3Ø 477 MCM ACSR @ \$75,000 per mi.						
300.17	c. Swift Trails, Fdr 81000, Convert 2.3 mi. of 3Ø #6cu to			138,000			138,000
	3Ø #4/0 ACSR @ \$60,000 per mi.						
	d. Total - Conversions, etc.	93,750	0	940,500	0	0	1034,250
	4. New Substations & Switching - 400						
400.01	a. Pima Sub, New 69.7.2/12.5 kV 12/16/20 MVA Sub		1310,000				1310,000
400.02	b. Talley Sub, New 69.7.2/12.5 kV 12/16/20 MVA Sub			1600,000			1600,000
	c. Total - New Substations	0	1310,000	1600,000	0	0	2,910,000
	5. Substation Changes - 500						
	a. None Required						
	6. Miscellaneous Dist. Equip. - 600						
601	a. Transformers and Meters						
	1) 1440 Transformers (Over Head)						
	@ \$1050 each	302,400	302,400	302,400	302,400	302,400	1512,000
	Contributions (Fully Contributed)	302,400	302,400	302,400	302,400	302,400	1512,000
	2) 220 Transformers (Pad Mounted)						
	@ \$2350 each	103,400	103,400	103,400	103,400	103,400	517,000
	Contributions (Fully Contributed)	103,400	103,400	103,400	103,400	103,400	517,000
	3) 960 Meters (Regular)						
	@ \$110 each	21,120	21,120	21,120	21,120	21,120	105,600
	4) 50 Meters (Special)						
	@ \$350 each	3,500	3,500	3,500	3,500	3,500	17,500
	5) Automated Meter Reading	200,000	200,000	200,000	200,000	200,000	1,000,000
	6) Total - Transformers & Meters	630,420	630,420	630,420	630,420	630,420	3,152,100
	Total - Contributions for Transformers	405,800	405,800	405,800	405,800	405,800	2,029,000
	Total - Loan Funds	224,620	224,620	224,620	224,620	224,620	1,123,100

V. SUMMARY OF SYSTEM IMPROVEMENTS

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	2010	2011	2012	2013	2014	Total
603 b. Sectionalizing Equipment						
1) Various Sectionalizing Equipment System Wide at a total cost of \$150,000	30,000	30,000	30,000	30,000	30,000	150,000
2) Total - Sectionalizing Equipment	30,000	30,000	30,000	30,000	30,000	150,000
604 c. Voltage Regulators						
1) Cork, Fdr 1100, Relocate 3 - 150 amp Regulators	2,500					2,500
2) Talley, East Fdr, Relocate 3 - 200 amp Regulators	2,500					2,500
3) Total - Voltage Regulators	5,000	0	0	0	0	5,000
605 d. Capacitors						
1) Cork Incr. 300 to 450 - LE of 1208 @ \$25/kVAR	3,750					3,750
2) Talley 300 kVAR - LE of 3417 @ \$25/kVAR				7,500		7,500
3) Talley Incr. to 900 - LE of 3410 @ \$25/kVAR		22,500				22,500
4) Plant 450 kVAR - LE 2004 @ \$25/kVAR		11,250				11,250
5) Plant 450 kVAR - LE 2032a @ \$25/kVAR				11,250		11,250
6) Plant 300 kVAR - SE 3301 @ \$25/kVAR	7,500					7,500
7) San Jose 450 kVAR - LE of 4004 @ \$25/kVAR					11,250	11,250
8) San Jose Incr. to 450 - LE of 4006 @ \$25/kVAR	3,750					3,750
9) Total - Capacitors	15,000	33,750	0	18,750	11,250	78,750
606 e. Replacements						
1) 1000 Distribution Poles @ \$1700 each	340,000	340,000	340,000	340,000	340,000	1,700,000
2) 125 Distribution Crossarms @ \$360 each	9,000	9,000	9,000	9,000	9,000	45,000
3) 125 Guys & Anchors @ \$140 each	3,500	3,500	3,500	3,500	3,500	17,500
4) 500 Transformers @ \$180 each	18,000	18,000	18,000	18,000	18,000	590,000
5) 250 Arrestors @ \$220 each	11,000	11,000	11,000	11,000	11,000	55,000
6) 200 Cutouts @ \$140 each	5,600	5,600	5,600	5,600	5,600	28,000
7) Total - Ordinary Replacements	487,100	487,100	487,100	487,100	487,100	2,435,500
f. Total - Miscellaneous	1,167,520	1,181,270	1,147,520	1,166,270	1,158,770	5,821,350
7. Other Distribution Items - 700						
a. Engineering Fees - Included in						
702 b. Security Lights						
1) 150 new installations @ \$100 each	3,000	3,000	3,000	3,000	3,000	15,000
2) Total Security Lights	3,000	3,000	3,000	3,000	3,000	15,000
c. Total - Other Distribution	3,000	3,000	3,000	3,000	3,000	15,000
8. Grand Total Distribution	1,795,612	3,130,612	4,222,362	1,700,612	1,693,112	12,542,310
Grand Total Contributions	715,652	715,652	715,652	715,652	715,652	3,578,260
Grand Total Distribution (Net Loan Funds)	1,079,960	2,414,960	3,506,710	984,960	977,460	8,964,050

V. SUMMARY OF SYSTEM IMPROVEMENTS**Page V - 4**

	2010	2011	2012	2013	2014	Total
B. Transmission						
1. NewLine- 800						
a. None Required						
2. NewSubstations & Switching- 900						
a. None Required						
3. Line & Station Changes - 1000						
a. None Required						
4. Other Transmission Items - 1100						
1103 a. 200 Pole Replacements @\$3440 each	137,600	137,600	137,600	137,600	137,600	688,000
1103 b. 50 crossarm Replacements @\$710 each	7,100	7,100	7,100	7,100	7,100	35,500
c. Total - Other Transmission Items	144,700	144,700	144,700	144,700	144,700	723,500
5. Grand Total Transmission	144,700	144,700	144,700	144,700	144,700	723,500
C. Generation - 1200						
None Required						
D. Warehouse & Associated Structures - 1300						
None Required						
E. Grand Total - All Costs	1940,312	3,275,312	4,367,062	1845,312	1837,812	13,265,810
Grand Total - Net Loan Funds	1224,660	2,559,660	3,651,410	1,129,660	1,122,160	9,687,550

Appendix A - 1

Existing System with Projected Loading Distribution Voltage Analyses

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\EXISTING SYSTEM PROJECTED LOAD 5-29-09.WM\
Title:
Case:

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Units Displayed In Volts																				
-Base Voltage:120.0-																				
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	-----Element-----													
							Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
Cork Sub		A	Blank	7.56Y	126.0	0.00	0.00	396.10	0	2905	727	97	0.00	0.0	0.000	0.000	0	0	0	42
		B		7.56Y	126.0	0.00	0.00	326.89	0	2432	441	98					0	0	0	42
		C		7.56Y	126.0	0.00	0.00	336.97	0	2505	462	98					0	0	0	42
----- Feeder No. 1100 (Fdr 1100) Beginning with Device Fdr 1100 -----																				
Fdr 1100	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	144.08	0	1070	206	98	0.00	0.0	0.000	0.000	0	0	0	19
		B		7.56Y	126.0	0.00	0.00	150.81	0	1116	235	98					0	0	0	23
		C		7.56Y	126.0	0.00	0.00	158.80	0	1168	278	97					0	0	0	23
1250	Fdr 1100	A	#4/0 ACSR	7.49Y	124.8	1.18	1.18	144.08	42	1070	206	98	28.11	0.8	0.931	0.931	15	8	1	19
		B		7.47Y	124.6	1.42	1.42	150.81	44	1116	235	98					15	8	1	23
		C		7.47Y	124.5	1.54	1.54	158.80	47	1168	278	97					15	8	1	23
1202	1250	A	#4/0 ACSR	7.26Y	121.1	3.75	4.93	141.84	42	1046	183	99	92.36	2.8	4.049	3.118	3	2	1	19
		B		7.20Y	120.0	4.56	5.98	148.56	44	1090	211	98					3	2	1	23
		C		7.17Y	119.5	4.93	6.48	156.54	46	1142	251	98					3	2	1	23
1204	1202	A	#4/0 ACSR	7.17Y	119.5	1.61	6.54	141.34	42	1018	133	99	41.35	1.3	5.456	1.407	4	2	1	18
		B		7.08Y	118.0	1.98	7.95	148.06	44	1054	159	99					4	2	1	22
		C		7.04Y	117.4	2.12	8.60	156.04	46	1103	187	99					4	2	1	22 L
REG1371	1204	A	219 AMP	7.50Y	124.9	-5.47	1.07	140.71	64	1003	109	99	percent Boost= 4.38 Tap= 7.0							17
		B		7.46Y	124.3	-6.21	1.74	147.42	67	1036	134	99	percent Boost= 5.00 Tap= 8.0							21
		C		7.46Y	124.4	-7.00	1.60	155.39	71	1083	157	99	percent Boost= 5.62 Tap= 9.0							21
1208	REG1371	A	#4/0 ACSR	7.49Y	124.8	0.08	1.15	134.55	40	1003	109	99	1.98	0.1	5.531	0.075	0	0	0	17
		B		7.45Y	124.2	0.10	1.84	140.05	41	1036	134	99					0	0	0	21
		C		7.46Y	124.3	0.10	1.71	146.65	43	1083	157	99					0	0	0	21
1212	1208	A	#4/0 ACSR	7.46Y	124.3	0.58	1.74	89.53	26	671	-12	-100	10.32	0.5	6.672	1.141	131	68	1	15
		B		7.41Y	123.4	0.71	2.55	94.62	28	705	14	100					131	68	1	19
		C		7.42Y	123.7	0.55	2.25	89.57	26	668	-9	-100					131	68	1	15
1288	1212	A	#6 HdCu -	7.45Y	124.2	0.02	1.75	2.19	2	14	8	87	0.00	0.0	6.973	0.301	11	6	1	2
		B		7.41Y	123.4	0.02	2.57	2.19	2	14	7	89					11	6	1	2
		C		7.42Y	123.7	0.02	2.27	2.19	2	14	7	89					11	6	1	2
1214	1288	A	#4 ACSR 6/	7.45Y	124.2	0.01	1.77	0.47	0	3	2	83	0.00	0.0	8.451	1.478	3	2	1	1
		B		7.41Y	123.4	0.01	2.58	0.47	0	3	2	89					3	2	1	1
		C		7.42Y	123.7	0.01	2.28	0.47	0	3	2	89					3	2	1	1
1206	1212	A	#4/0 ACSR	7.45Y	124.2	0.08	1.81	70.50	21	517	-96	-98	1.53	0.1	6.892	0.220	0	0	1	13
		B		7.40Y	123.3	0.10	2.65	75.05	22	551	-71	-99					0	0	1	17
		C		7.42Y	123.7	0.07	2.32	70.49	21	515	-93	-98					0	0	1	13
OCD1367	1206	A	Unknown	7.45Y	124.2	0.00	1.81	0.00	0	0	0	100	0.00	0.0	6.892	0.000	0	0	0	0
		B		7.40Y	123.3	0.00	2.65	0.00	0	0	0	100					0	0	0	0
		C		7.42Y	123.7	0.00	2.32	0.00	0	0	0	100					0	0	0	0
CAP1369 P P	1206	A	Cap (300)	7.45Y	124.2	0.00	1.81	-14.37	0	0	-107	0	0.00	0.0	6.892	0.000	0	0	0	0
		B		7.40Y	123.3	0.00	2.65	-14.28	0	0	-106	0					0	0	0	0 P
		C		7.42Y	123.7	0.00	2.32	-14.31	0	0	-106	0					0	0	0	0 P
1292	1206	A	#4/0 ACSR	7.44Y	124.0	0.23	2.04	69.28	20	516	10	100	2.86	0.2	7.315	0.424	0	0	0	12
		B		7.38Y	123.1	0.27	2.93	74.53	22	551	34	100					0	0	0	16
		C		7.41Y	123.5	0.21	2.53	69.33	20	514	12	100					0	0	0	12
1222	1292	A	#4 HdCu -	7.20Y	119.9	4.04	6.08	66.34	39	493	-3	-100	50.77	3.4	10.082	2.766	23	12	1	11
		B		7.11Y	118.5	4.58	7.51	71.53	42	528	21	100					23	12	1	15
		C		7.17Y	119.5	3.93	6.46	66.39	39	492	-1	-100					23	12	1	11
1240	1222	A	#4 ACSR 6/	7.19Y	119.9	0.03	6.11	1.98	1	13	7	88	0.01	0.0	10.486	0.404	2	1	1	1
		B		7.11Y	118.5	0.03	7.54	1.98	1	13	6	89					2	1	1	1
		C		7.17Y	119.5	0.03	6.49	1.98	1	13	7	89					2	1	1	1
1242	1240	A	#4 ACSR 6/	7.19Y	119.8	0.11	6.22	1.66	1	11	6	88	0.02	0.1	13.752	3.266	11	6	1	1
		B		7.10Y	118.4	0.11	7.64	1.66	1	10	5	89					11	6	1	1
		C		7.16Y	119.4	0.11	6.59	1.66	1	11	5	89					11	6	1	1
CAP1468 P P	1222	A	Cap (300)	7.20Y	119.9	0.00	6.08	-13.88	0	0	-100	0	0.00	0.0	10.082	0.000	0	0	0	0
		B		7.11Y	118.5	0.00	7.51	-13.71	0	0	-98	0					0	0	0	0 P
		C		7.17Y	119.5	0.00	6.46	-13.84	0	0	-99	0					0	0	0	0 P

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\EXISTING SYSTEM PROJECTED LOAD 5-29-09.WM\
Title:
Case:

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		Units Displayed In Volts																		
		-Base Voltage:120.0-																		
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
C OH1424	1222	A	#6 HdCu -	7.08Y	118.0	1.91	7.99	62.11	52	441	70	99	21.42	1.6	10.899	0.817	12	6	0	9 C
L		B		6.98Y	116.4	2.12	9.63	67.70	56	473	88	98					12	6	0	13 L
L		C		7.06Y	117.7	1.86	8.32	62.18	52	440	70	99					12	6	0	9 L
REG1372	OH1424	A	150 AMP	7.45Y	124.2	-6.21	1.78	60.36	40	423	61	99	percent Boost= 5.00 Tap= 8.0							9
		B		7.45Y	124.1	-7.76	1.87	65.93	44	453	79	99	percent Boost= 6.25 Tap=10.0							13
		C		7.48Y	124.7	-7.01	1.30	60.43	40	422	62	99	percent Boost= 5.62 Tap= 9.0							9
C 1270	REG1372	A	#6 HdCu -	7.41Y	123.5	0.77	2.55	57.34	48	423	61	99	7.91	0.6	11.253	0.354	5	3	0	9
		B		7.40Y	123.3	0.84	2.71	61.81	52	453	79	99					5	3	0	13 C
		C		7.44Y	123.9	0.75	2.05	57.03	48	422	62	99					5	3	0	9
1274	1270	A	#6 HdCu -	7.40Y	123.4	0.06	2.61	1.29	1	8	4	89	0.01	0.0	13.717	2.464	8	4	1	1
		B		7.39Y	123.2	0.06	2.77	1.29	1	8	4	89					8	4	1	1
		C		7.43Y	123.9	0.06	2.11	1.29	1	9	4	89					8	4	1	1
1272	1270	A	#6 HdCu -	7.36Y	122.6	0.81	3.36	55.37	46	407	53	99	8.15	0.7	11.640	0.387	1	0	1	8
		B		7.34Y	122.4	0.89	3.60	59.82	50	437	71	99					1	0	1	12
		C		7.39Y	123.2	0.79	2.84	55.06	46	406	54	99					1	0	1	8
1224	1272	A	#6 HdCu -	7.23Y	120.5	2.14	5.50	55.29	46	404	52	99	21.20	1.7	12.683	1.043	15	8	1	7
		B		7.20Y	120.0	2.36	5.96	59.74	50	433	69	99					15	8	1	11
		C		7.27Y	121.1	2.07	4.91	54.98	46	403	52	99					15	8	1	7
1276a	1224	A	#6 HdCu -	7.14Y	119.1	1.43	6.93	53.05	44	381	42	99	13.84	1.2	13.396	0.713	0	0	0	7
		B		7.11Y	118.5	1.58	7.54	57.47	48	410	58	99					0	0	0	11
		C		7.18Y	119.7	1.38	6.30	52.73	44	381	42	99					0	0	0	7
L 1276	1276a	A	#6 HdCu -	6.95Y	115.9	3.18	10.11	53.05	44	377	40	99	30.33	2.6	15.038	1.642	21	11	1	7 L
L		B		6.90Y	114.9	3.52	11.06	57.47	48	405	56	99					21	11	1	11 L
L		C		7.00Y	116.6	3.08	9.37	52.73	44	377	40	99					21	11	1	7 L
L CAP1480	1276	A	Cap (150)	6.95Y	115.9	0.00	10.11	-6.71	0	0	-47	0	0.00	0.0	15.038	0.000	0	0	0	0 L
L		B		6.90Y	114.9	0.00	11.06	-6.65	0	0	-46	0					0	0	0	0 L
L		C		7.00Y	116.6	0.00	9.37	-6.75	0	0	-47	0					0	0	0	0 L
L OH1423	1276	A	#6 HdCu -	6.87Y	114.5	1.35	11.46	50.93	42	347	72	98	11.87	1.1	15.776	0.738	44	23	1	6 L
L		B		6.81Y	113.4	1.50	12.56	55.50	46	373	87	97					44	23	1	10 L
L		C		6.92Y	115.3	1.31	10.68	50.63	42	347	73	98					44	23	1	6 L
REG1375	OH1423	A	100 AMP	7.48Y	124.7	-10.13	1.34	44.36	44	301	49	99	percent Boost= 8.12 Tap=13.0							5
		B		7.46Y	124.3	-10.88	1.69	48.87	49	326	64	98	percent Boost= 8.75 Tap=14.0							9
		C		7.48Y	124.7	-9.35	1.33	44.05	44	301	49	99	percent Boost= 7.50 Tap=12.0							5
1226	REG1375	A	#6 HdCu -	7.42Y	123.7	0.99	2.32	40.75	34	301	49	99	7.01	0.8	16.464	0.688	41	21	1	5
		B		7.39Y	123.2	1.11	2.80	44.59	37	326	64	98					41	21	1	9
		C		7.42Y	123.7	0.96	2.29	40.75	34	301	49	99					41	21	1	5
P CAP1373	1226	A	Cap (300)	7.42Y	123.7	0.00	2.32	-14.31	0	0	-106	0	0.00	0.0	16.464	0.000	0	0	0	0
		B		7.39Y	123.2	0.00	2.80	-14.26	0	0	-105	0					0	0	0	0 P
		C		7.42Y	123.7	0.00	2.29	-14.32	0	0	-106	0					0	0	0	0
1228	1226	A	#6 HdCu -	7.36Y	122.7	0.99	3.31	38.90	32	256	133	89	5.83	0.7	17.361	0.897	134	69	1	5
		B		7.32Y	122.1	1.15	3.95	42.92	36	282	146	89					134	69	1	9
		C		7.37Y	122.8	0.95	3.24	38.90	32	256	133	89					134	69	1	5
1278	1228	A	#6 HdCu -	7.34Y	122.3	0.39	3.71	17.96	15	117	61	89	1.13	0.3	18.189	0.828	76	39	2	4
		B		7.29Y	121.5	0.54	4.49	21.98	18	143	74	89					76	39	2	8
		C		7.34Y	122.4	0.35	3.59	17.96	15	117	61	89					76	39	2	4
1230	1278	A	#4 ACSR 6/	7.33Y	122.2	0.14	3.85	6.12	4	40	21	89	0.20	0.1	19.115	0.926	32	17	1	2
		B		7.27Y	121.2	0.31	4.80	10.14	7	66	34	89					32	17	1	6
		C		7.34Y	122.3	0.09	3.68	6.12	4	40	21	89					32	17	1	2
1298	1230	B	#4 ACSR 6/	7.24Y	120.7	0.48	5.27	4.02	3	26	13	89	0.09	0.3	22.105	2.990	9	5	2	4
1232	1298	B	#4 ACSR 6/	7.22Y	120.4	0.37	5.65	2.63	2	17	9	88	0.03	0.2	28.013	5.908	17	9	2	2
1296	1230	A	#4 ACSR 6/	7.33Y	122.1	0.03	3.87	1.09	1	7	4	87	0.00	0.0	20.451	1.336	7	4	1	1
		B		7.27Y	121.2	0.03	4.83	1.09	1	7	4	89					7	4	1	1
		C		7.34Y	122.3	0.03	3.71	1.09	1	7	4	89					7	4	1	1
1216	1292	A	#4 ACSR 6/	7.44Y	123.9	0.03	2.07	3.30	2	22	11	89	0.01	0.0	7.800	0.485	21	11	1	1
		B		7.38Y	123.0	0.03	2.96	3.30	2	22	11	89					21	11	1	1
		C		7.41Y	123.4	0.03	2.56	3.30	2	22	11	89					21	11	1	1

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\EXISTING SYSTEM PROJECTED LOAD 5-29-09.WM\
Title:
Case:

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Units Displayed In Volts																				
-Base Voltage:120.0-																				
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	-----Element-----													
							Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
CAP1459 P P	1208	A	Cap (150)	7.49Y	124.8	0.00	1.15	-7.22	0	0	-54	0	0.00	0.0	5.531	0.000	0	0	0	0
		B		7.45Y	124.2	0.00	1.84	-7.19	0	0	-54	0					0	0	0	0 P
		C		7.46Y	124.3	0.00	1.71	-7.19	0	0	-54	0					0	0	0	0 P
1210	1208	A	#1/0 ACSR	7.40Y	123.4	1.44	2.59	49.99	22	332	174	89	12.62	1.2	7.259	1.728	37	19	1	2
		B		7.35Y	122.5	1.62	3.46	49.98	22	330	172	89					37	19	1	2
		C		7.33Y	122.1	2.19	3.89	62.84	27	415	219	88					37	19	1	6
1210-1218	1210	A	#4 ACSR 6/	7.39Y	123.2	0.18	2.77	12.10	9	80	41	89	0.36	0.2	7.629	0.371	0	0	0	1
		B		7.34Y	122.4	0.18	3.63	12.10	9	79	41	89					0	0	0	1
		C		7.32Y	121.9	0.18	4.07	12.10	9	79	41	89					0	0	0	1
1218	1210-1218	A	#4 ACSR 6/	7.38Y	123.1	0.16	2.93	12.10	9	79	41	89	0.22	0.1	8.310	0.680	77	40	1	1
		B		7.33Y	122.2	0.16	3.80	12.10	9	79	41	89					77	40	1	1
		C		7.31Y	121.8	0.16	4.23	12.10	9	79	41	89					77	40	1	1
1294	1210	A	#2 HdCu -	7.39Y	123.2	0.19	2.78	32.17	14	211	110	89	1.35	0.2	8.152	0.893	205	107	1	1
		B		7.34Y	122.3	0.28	3.74	32.16	14	210	109	89					205	107	1	1
		C		7.29Y	121.5	0.56	4.46	45.02	20	293	152	89					205	107	1	5
1220	1294	C	#4 ACSR 6/	7.27Y	121.2	0.31	4.76	12.86	9	83	43	89	0.14	0.2	9.148	0.996	82	43	4	4
----- Feeder No. 1000 (Fdr 1000) Beginning with Device Fdr 1000 -----																				
Fdr 1000	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	204.61	0	1479	452	96	0.00	0.0	0.000	0.000	0	0	0	15
		B		7.56Y	126.0	0.00	0.00	128.27	0	960	137	99					0	0	0	11
		C		7.56Y	126.0	0.00	0.00	130.69	0	981	115	99					0	0	0	11
1004a	Fdr 1000	A	477 MCM AC	7.39Y	123.1	2.91	2.91	204.61	31	1479	452	96	27.75	0.8	1.785	1.785	0	0	0	15
		B		7.55Y	125.8	0.17	0.17	128.27	19	960	137	99					0	0	0	11
		C		7.49Y	124.8	1.18	1.18	130.69	20	981	115	99					0	0	0	11
L 1004 C C	1004a	A	#2 HdCu -	7.03Y	117.2	5.86	8.77	204.61	89	1458	396	97	93.57	2.8	3.274	1.489	95	40	1	15 L
		B		7.43Y	123.8	2.02	2.19	128.27	56	961	117	99					95	40	1	11 C
		C		7.31Y	121.9	2.96	4.14	130.69	57	973	103	99					95	40	1	11 C
L CAP1305 P P	1004	A	Cap (300)	7.03Y	117.2	0.00	8.77	-13.57	0	0	-95	0	0.00	0.0	3.274	0.000	0	0	0	0 L
		B		7.43Y	123.8	0.00	2.19	-14.33	0	0	-106	0					0	0	0	0 P
		C		7.31Y	121.9	0.00	4.14	-14.10	0	0	-103	0					0	0	0	0 P
L 1060 C C	1004	A	#2 HdCu -	6.76Y	112.6	4.64	13.41	193.94	84	1305	398	96	67.59	2.2	4.479	1.205	56	23	1	15 L
		B		7.33Y	122.2	1.58	3.77	116.39	51	849	163	98					56	23	1	11 C
		C		7.17Y	119.5	2.37	6.51	118.72	52	854	155	98					56	23	1	11 C
L CAP1416 P P	1060	A	Cap (300)	6.76Y	112.6	0.00	13.41	-13.03	0	0	-88	0	0.00	0.0	4.479	0.000	0	0	0	0 L
		B		7.33Y	122.2	0.00	3.77	-14.15	0	0	-104	0					0	0	0	0 P
		C		7.17Y	119.5	0.00	6.51	-13.83	0	0	-99	0					0	0	0	0 P
L LS-2	1060	A	Node	6.76Y	112.6	0.00	13.41	189.50	0	1208	424	94	0.00	0.0	4.479	0.000	0	0	0	14 L
		B		7.33Y	122.2	0.00	3.77	111.33	0	783	230	96					0	0	0	10
		C		7.17Y	119.5	0.00	6.51	113.53	0	783	223	96					0	0	0	10
C REG1379 C C	LS-2	A	100 AMP	7.45Y	124.2	-11.65	1.76	189.50	190	1208	424	94	percent Boost= 9.38 Tap=15.0						14	C
		B		7.47Y	124.6	-2.34	1.43	111.33	111	783	230	96	percent Boost= 1.88 Tap= 3.0						10	C
		C		7.45Y	124.1	-4.66	1.85	113.53	114	783	223	96	percent Boost= 3.75 Tap= 6.0						10	C
C 1005	REG1379	A	#2 HdCu -	7.34Y	122.4	1.87	3.63	171.74	75	1208	424	94	25.30	0.9	5.015	0.536	14	6	1	14 C
		B		7.43Y	123.8	0.78	2.22	109.24	47	783	230	96					14	6	1	10
		C		7.39Y	123.1	1.04	2.89	109.27	48	783	223	96					14	6	1	10
C 1030	1005	A	#2 HdCu -	7.17Y	119.5	2.88	6.51	169.63	74	1178	404	95	38.29	1.4	5.857	0.843	22	9	1	13 C
		B		7.36Y	122.6	1.19	3.40	107.14	47	765	219	96					22	9	1	9
		C		7.29Y	121.5	1.59	4.48	107.18	47	762	214	96					22	9	1	9
C 1008	1030	A	#2 HdCu -	7.15Y	119.2	0.25	6.77	143.15	62	979	309	95	2.75	0.1	5.944	0.087	0	0	0	8 C
		B		7.35Y	122.5	0.09	3.50	85.56	37	611	150	97					0	0	0	6
		C		7.28Y	121.4	0.13	4.61	85.59	37	606	149	97					0	0	0	6
1012	1008	A	#2 HdCu -	7.14Y	119.0	0.23	7.00	23.95	10	158	66	92	0.53	0.1	7.000	1.056	159	66	1	1
		B		7.34Y	122.3	0.24	3.73	23.95	10	163	67	92					159	66	1	1
		C		7.27Y	121.2	0.23	4.84	23.95	10	161	67	92					159	66	1	1
C 1016 C C	1008	A	#6 HdCu -	7.12Y	118.7	0.52	7.28	123.93	103	819	340	92	5.26	0.3	6.043	0.099	0	0	1	7 C
		B		7.34Y	122.3	0.20	3.69	66.03	55	448	186	92					0	0	1	5 C
		C		7.27Y	121.1	0.26	4.87	66.03	55	444	184	92					0	0	1	5 C

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\EXISTING SYSTEM PROJECTED LOAD 5-29-09.WM\
Title:
Case:

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Units Displayed In Volts																				
-Base Voltage:120.0-																				
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Element-----													
							Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
L 1018	1016	A	#6 HdCu -	7.04Y	117.3	1.37	8.66	76.51	64	503	209	92	5.21	0.7	6.492	0.449	124	51	1	3 L
		B		7.34Y	122.4	-0.11	3.59	18.61	16	126	52	92					124	51	1	1
		C		7.25Y	120.9	0.22	5.09	18.61	16	125	52	92					124	51	1	1
L 1020	1018	A	#6 HdCu -	7.02Y	117.1	0.26	8.92	57.90	48	377	156	92	0.53	0.1	6.689	0.196	385	160	2	2 L
1070	1016	A	#6 HdCu -	7.09Y	118.1	0.60	7.89	47.37	39	312	129	92	4.49	0.5	6.404	0.361	60	25	1	3
		B		7.30Y	121.7	0.61	4.30	47.37	39	321	133	92					60	25	1	3
		C		7.23Y	120.5	0.59	5.46	47.37	39	318	132	92					60	25	1	3
1074	1070	A	#6 HdCu -	7.08Y	118.0	0.11	8.00	6.31	5	41	17	92	0.08	0.1	7.247	0.843	40	17	1	1
		B		7.30Y	121.6	0.11	4.41	6.31	5	43	18	92					40	17	1	1
		C		7.23Y	120.4	0.11	5.57	6.31	5	42	17	92					40	17	1	1
1076	1074	A	#4 ACSR 6/	7.08Y	118.0	0.00	8.00	0.28	0	2	1	89	0.00	0.0	7.460	0.213	2	1	1	1
		B		7.30Y	121.6	0.00	4.41	0.28	0	2	1	92					2	1	1	1
		C		7.23Y	120.4	0.00	5.57	0.28	0	2	1	92					2	1	1	1
1072	1070	A	#2 HdCu -	7.08Y	118.1	0.03	7.92	32.06	14	210	87	92	0.13	0.0	6.453	0.049	0	0	0	1
		B		7.30Y	121.7	0.03	4.33	32.06	14	216	90	92					0	0	0	1
		C		7.23Y	120.5	0.03	5.49	32.05	14	214	89	92					0	0	0	1
1014	1072	A	#2 HdCu -	7.08Y	118.1	0.03	7.95	32.06	14	210	87	92	0.10	0.0	6.560	0.107	213	88	1	1
		B		7.30Y	121.6	0.03	4.36	32.06	14	216	90	92					213	88	1	1
		C		7.23Y	120.5	0.03	5.52	32.05	14	214	89	92					213	88	1	1
CAP1424 P P	1008	A	Cap (300)	7.15Y	119.2	0.00	6.77	-13.80	0	0	-99	0	0.00	0.0	5.944	0.000	0	0	0	0
		B		7.35Y	122.5	0.00	3.50	-14.18	0	0	-104	0					0	0	0	0 P
		C		7.28Y	121.4	0.00	4.61	-14.05	0	0	-102	0					0	0	0	0 P
1032	1030	A	#4 HdCu -	7.15Y	119.1	0.40	6.91	23.23	14	154	64	92	0.86	0.2	6.596	0.739	55	23	1	4
		B		7.34Y	122.3	0.25	3.65	18.45	11	125	52	92					55	23	1	2
		C		7.27Y	121.2	0.28	4.76	18.45	11	124	51	92					55	23	1	2
1036	1032	A	#6 HdCu -	7.13Y	118.9	0.19	7.10	14.94	12	99	41	92	0.19	0.1	7.048	0.451	67	28	1	3
		B		7.34Y	122.3	0.07	3.72	10.17	8	69	29	92					67	28	1	1
		C		7.27Y	121.2	0.09	4.85	10.16	8	68	28	92					67	28	1	1
1062	1036	A	#6 HdCu -	7.12Y	118.7	0.21	7.31	4.78	4	31	13	92	0.04	0.1	8.982	1.935	32	13	2	2
1034	1036	A	#4 ACSR 6/	7.13Y	118.9	0.00	7.10	0.17	0	1	0	100	0.00	0.0	7.718	0.670	1	0	1	1
		B		7.34Y	122.3	0.00	3.73	0.17	0	1	0	92					1	0	1	1
		C		7.27Y	121.1	0.00	4.85	0.17	0	1	0	92					1	0	1	1
----- Feeder No. 1200 (Fdr 1200) Beginning with Device Fdr 1200 -----																				
Fdr 1200	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	47.97	0	356	69	98	0.00	0.0	0.000	0.000	0	0	0	7
		B		7.56Y	126.0	0.00	0.00	47.97	0	356	69	98					0	0	0	7
		C		7.56Y	126.0	0.00	0.00	47.97	0	356	69	98					0	0	0	7
1201	Fdr 1200	A	#2 HdCu -	7.52Y	125.3	0.71	0.71	47.97	21	356	69	98	5.33	0.5	0.895	0.895	8	4	1	7
		B		7.52Y	125.3	0.71	0.71	47.97	21	356	69	98					8	4	1	7
		C		7.52Y	125.3	0.71	0.71	47.97	21	356	69	98					8	4	1	7
1286	1201	A	#6 HdCu -	7.51Y	125.2	0.05	0.76	2.71	2	18	9	89	0.02	0.0	1.875	0.980	17	9	1	1
		B		7.51Y	125.2	0.05	0.76	2.71	2	18	9	90					17	9	1	1
		C		7.51Y	125.2	0.05	0.76	2.71	2	18	9	90					17	9	1	1
1280	1201	A	#4 HdCu -	7.50Y	125.1	0.23	0.94	44.13	26	327	54	99	1.67	0.2	1.104	0.209	2	1	1	6
		B		7.50Y	125.1	0.23	0.94	44.13	26	327	54	99					2	1	1	6
		C		7.50Y	125.1	0.23	0.94	44.13	26	327	54	99					2	1	1	6
1284	1280	A	#6 HdCu -	7.46Y	124.3	0.73	1.67	40.39	34	300	41	99	4.98	0.6	1.597	0.493	17	8	1	5
		B		7.46Y	124.3	0.73	1.67	40.39	34	300	41	99					17	8	1	5
		C		7.46Y	124.3	0.73	1.67	40.39	34	300	41	99					17	8	1	5
CAP1376 P P	1284	A	Cap (300)	7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0	0.00	0.0	1.597	0.000	0	0	0	0 P
		B		7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0					0	0	0	0 P
		C		7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0					0	0	0	0
1251	1284	A	#4 HdCu -	7.43Y	123.8	0.53	2.20	42.00	25	281	139	90	3.44	0.4	2.076	0.479	4	2	1	4
		B		7.43Y	123.8	0.53	2.20	42.00	25	281	139	90					4	2	1	4
		C		7.43Y	123.8	0.53	2.20	42.00	25	281	139	90					4	2	1	4

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
Source: Cork Sub

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\EXISTING SYSTEM PROJECTED LOAD 5-29-09.WM\

Title:

Case:

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		Units Displayed In Volts														-----Element-----					
		-Base Voltage:120.0-																			
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru	
1252	1251	A	#6 HdCu -	7.40Y	123.4	0.45	2.64	5.91	5	39	19	90	0.30	0.3	5.980	3.904	38	19	1	1	
		B		7.40Y	123.4	0.45	2.64	5.91	5	39	19	90					38	19	1	1	
		C		7.40Y	123.4	0.45	2.64	5.91	5	39	19	90					38	19	1	1	
1256	1251	A	#6 HdCu -	7.35Y	122.5	1.28	3.48	35.44	30	236	116	90	5.89	0.8	3.503	1.427	158	78	1	3	
		B		7.35Y	122.5	1.28	3.48	35.44	30	236	116	90					158	78	1	3	
		C		7.35Y	122.5	1.28	3.48	35.44	30	236	116	90					158	78	1	3	
1260a	1256	A	#6 HdCu -	7.32Y	122.1	0.46	3.94	10.90	9	72	35	90	0.85	0.4	4.596	1.094	0	0	0	1	
		B		7.32Y	122.1	0.46	3.94	10.90	9	72	35	90					0	0	0	1	
		C		7.32Y	122.1	0.46	3.94	10.90	9	72	35	90					0	0	0	1	
1260b	1260a	A	#1/0 ACSR	7.32Y	121.9	0.12	4.06	10.90	5	72	35	90	0.18	0.1	5.172	0.576	0	0	0	1	
		B		7.32Y	121.9	0.12	4.06	10.90	5	72	35	90					0	0	0	1	
		C		7.32Y	121.9	0.12	4.06	10.90	5	72	35	90					0	0	0	1	
1260	1260b	A	#6 HdCu -	7.30Y	121.6	0.33	4.39	10.90	9	71	35	90	0.41	0.2	6.748	1.576	70	35	1	1	
		B		7.30Y	121.6	0.33	4.39	10.90	9	71	35	90					70	35	1	1	
		C		7.30Y	121.6	0.33	4.39	10.90	9	71	35	90					70	35	1	1	
1282	1280	A	#6 HdCu -	7.50Y	125.0	0.07	1.01	3.67	3	25	12	90	0.03	0.0	2.157	1.053	24	12	1	1	
		B		7.50Y	125.0	0.07	1.01	3.67	3	25	12	90					24	12	1	1	
		C		7.50Y	125.0	0.07	1.01	3.67	3	25	12	90					24	12	1	1	

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load Losses	Total
KW	7086	87	0	0	0	0	669	0.00	7842
KVAR	3325	44	-2458	0	0	0	718		1629

Lowest Voltage	Highest Accumulated Voltage Drop	Highest Element Voltage Drop
A-Phase -> 112.59 volts on 1060	13.41 volts on 1060	5.86 volts on 1004
B-Phase -> 113.44 volts on OH1423	12.56 volts on OH1423	4.58 volts on 1222
C-Phase -> 115.32 volts on OH1423	10.68 volts on OH1423	4.93 volts on 1202

Appendix A - 2

Projected System with Projected Loading Distribution Voltage Analyses

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\PROJECTED SYSTEM 7-07-09.WM\
Title:
Case:

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		Units Displayed In Volts															-----Element-----			
		-Base Voltage:120.0-																		
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
Cork Sub		A	Blank	7.56Y	126.0	0.00	0.00	206.80	0	1560	104	100	0.00	0.0	0.000	0.000	0	0	0	28
		B		7.56Y	126.0	0.00	0.00	212.53	0	1601	130	100					0	0	0	32
		C		7.56Y	126.0	0.00	0.00	220.41	0	1657	176	99					0	0	0	32
----- Feeder No. 1100 (Fdr 1100) Beginning with Device Fdr 1100 -----																				
Fdr 1100	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	138.56	0	1045	79	100	0.00	0.0	0.000	0.000	0	0	0	19
		B		7.56Y	126.0	0.00	0.00	144.32	0	1086	104	100					0	0	0	23
		C		7.56Y	126.0	0.00	0.00	152.31	0	1142	150	99					0	0	0	23
1250	Fdr 1100	A	#4/0 ACSR	7.50Y	125.0	0.95	0.95	138.56	41	1045	79	100	25.85	0.8	0.931	0.931	15	8	1	19
		B		7.49Y	124.8	1.18	1.18	144.32	42	1086	104	100					15	8	1	23
		C		7.48Y	124.7	1.32	1.32	152.31	45	1142	150	99					15	8	1	23
1202	1250	A	#4/0 ACSR	7.32Y	122.1	2.99	3.94	136.42	40	1022	57	100	84.97	2.7	4.049	3.118	3	2	1	19
		B		7.26Y	121.1	3.74	4.92	142.16	42	1062	82	100					3	2	1	23
		C		7.23Y	120.5	4.16	5.48	150.12	44	1116	124	99					3	2	1	23
1204	1202	A	#4/0 ACSR	7.25Y	120.8	1.26	5.20	135.95	40	996	10	100	38.04	1.2	5.456	1.407	4	2	1	18
		B		7.17Y	119.5	1.60	6.52	141.69	42	1029	34	100					4	2	1	22
		C		7.13Y	118.8	1.77	7.24	149.64	44	1080	65	100					4	2	1	22
REG1371	1204	A	219 AMP	7.53Y	125.5	-4.71	0.49	135.35	62	981	-12	-100	percent Boost= 3.75 Tap= 6.0							17
		B		7.50Y	124.9	-5.47	1.06	141.08	64	1011	11	100	percent Boost= 4.38 Tap= 7.0							21
		C		7.50Y	125.0	-6.25	0.99	149.02	68	1061	38	100	percent Boost= 5.00 Tap= 8.0							21
1208	REG1371	A	#4/0 ACSR	7.53Y	125.4	0.06	0.55	130.27	38	981	-12	-100	1.84	0.1	5.531	0.075	0	0	0	17
		B		7.49Y	124.9	0.08	1.14	134.90	40	1011	11	100					0	0	0	21
		C		7.50Y	124.9	0.09	1.08	141.57	42	1061	38	100					0	0	0	21
1212	1208	A	#4/0 ACSR	7.50Y	124.9	0.53	1.08	86.06	25	647	-24	-100	9.41	0.5	6.672	1.141	131	68	1	15
		B		7.45Y	124.2	0.64	1.78	90.58	27	679	-1	-100					131	68	1	19
		C		7.47Y	124.4	0.50	1.58	85.94	25	644	-21	-100					131	68	1	15
1288	1212	A	#6 HdCu -	7.49Y	124.9	0.02	1.10	2.19	2	15	8	88	0.00	0.0	6.973	0.301	11	6	1	2
		B		7.45Y	124.2	0.02	1.80	2.19	2	14	8	89					11	6	1	2
		C		7.46Y	124.4	0.02	1.59	2.19	2	15	8	89					11	6	1	2
1214	1288	A	#4 ACSR 6/	7.49Y	124.9	0.01	1.11	0.47	0	3	2	83	0.00	0.0	8.451	1.478	3	2	1	1
		B		7.45Y	124.2	0.01	1.81	0.47	0	3	2	89					3	2	1	1
		C		7.46Y	124.4	0.01	1.61	0.47	0	3	2	89					3	2	1	1
1206	1212	A	#4/0 ACSR	7.49Y	124.9	0.07	1.15	67.35	20	493	-108	-98	1.38	0.1	6.892	0.220	0	0	1	13
		B		7.45Y	124.1	0.09	1.87	71.32	21	525	-85	-99					0	0	1	17
		C		7.46Y	124.4	0.06	1.64	67.16	20	490	-105	-98					0	0	1	13
OCD1367	1206	A	Unknown	7.49Y	124.9	0.00	1.15	0.00	0	0	0	100	0.00	0.0	6.892	0.000	0	0	0	0
		B		7.45Y	124.1	0.00	1.87	0.00	0	0	0	100					0	0	0	0
		C		7.46Y	124.4	0.00	1.64	0.00	0	0	0	100					0	0	0	0
P CAP1369 P P	1206	A	Cap (300)	7.49Y	124.9	0.00	1.15	-14.45	0	0	-108	0	0.00	0.0	6.892	0.000	0	0	0	0 P
		B		7.45Y	124.1	0.00	1.87	-14.37	0	0	-107	0					0	0	0	0 P
		C		7.46Y	124.4	0.00	1.64	-14.39	0	0	-107	0					0	0	0	0 P
1292	1206	A	#4/0 ACSR	7.48Y	124.6	0.21	1.36	65.72	19	492	-1	-100	2.56	0.2	7.315	0.424	0	0	0	12
		B		7.43Y	123.9	0.25	2.12	70.40	21	524	21	100					0	0	0	16
		C		7.45Y	124.2	0.19	1.83	65.62	19	490	2	100					0	0	0	12
1222	1292	A	#4/0 ACSR	7.41Y	123.5	1.15	2.51	62.82	18	470	-14	-100	14.57	1.0	10.082	2.766	23	12	1	11
		B		7.35Y	122.5	1.42	3.53	67.43	20	501	8	100					23	12	1	15
		C		7.39Y	123.1	1.06	2.89	62.71	18	467	-11	-100					23	12	1	11
1240	1222	A	#4 ACSR 6/	7.41Y	123.5	0.03	2.54	1.98	1	13	7	88	0.01	0.0	10.486	0.404	2	1	1	1
		B		7.35Y	122.4	0.03	3.56	1.98	1	13	7	89					2	1	1	1
		C		7.38Y	123.1	0.03	2.92	1.98	1	13	7	89					2	1	1	1
1242	1240	A	#4 ACSR 6/	7.40Y	123.4	0.11	2.65	1.66	1	11	6	88	0.02	0.1	13.752	3.266	11	6	1	1
		B		7.34Y	122.3	0.11	3.67	1.66	1	11	6	89					11	6	1	1
		C		7.38Y	123.0	0.11	3.03	1.66	1	11	6	89					11	6	1	1
P CAP1468 P P	1222	A	Cap (300)	7.41Y	123.5	0.00	2.51	-14.29	0	0	-106	0	0.00	0.0	10.082	0.000	0	0	0	0 P
		B		7.35Y	122.5	0.00	3.53	-14.17	0	0	-104	0					0	0	0	0 P
		C		7.39Y	123.1	0.00	2.89	-14.25	0	0	-105	0					0	0	0	0 P

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
Source: Cork Sub

Detail

Database: P:\AZ 17-GRAHAM\CWP\CWP2010-2014\VD\PROJECTED SYSTEM 7-07-09.WM\
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		Units Displayed In Volts																		
		-Base Voltage:120.0-																		
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	-----Element-----			
																	KW	KVAR	Cons On	Cons Thru
OH1424	1222	A	#4/0 ACSR	7.38Y	123.1	0.44	2.95	58.45	17	428	65	99	3.84	0.3	10.899	0.817	12	6	0	9
		B		7.32Y	122.0	0.51	4.04	63.48	19	459	83	98					12	6	0	13
		C		7.36Y	122.7	0.41	3.29	58.39	17	426	67	99					12	6	0	9
1270	OH1424	A	#4/0 ACSR	7.37Y	122.9	0.18	3.13	56.70	17	415	57	99	1.59	0.1	11.253	0.354	5	3	0	9
		B		7.30Y	121.7	0.21	4.26	61.72	18	445	74	99					5	3	0	13
		C		7.35Y	122.5	0.17	3.46	56.65	17	413	59	99					5	3	0	9
1274	1270	A	#6 HdCu -	7.37Y	122.8	0.06	3.19	1.29	1	8	4	89	0.01	0.0	13.717	2.464	8	4	1	1
		B		7.30Y	121.7	0.06	4.32	1.29	1	8	4	89					8	4	1	1
		C		7.35Y	122.5	0.06	3.53	1.29	1	8	4	89					8	4	1	1
1272	1270	A	#4/0 ACSR	7.36Y	122.7	0.19	3.32	54.74	16	401	49	99	1.64	0.1	11.640	0.387	1	0	1	8
		B		7.29Y	121.5	0.23	4.48	59.73	18	431	66	99					1	0	1	12
		C		7.34Y	122.4	0.18	3.64	54.68	16	399	51	99					1	0	1	8
1224	1272	A	#4/0 ACSR	7.33Y	122.2	0.50	3.82	54.66	16	399	48	99	4.26	0.3	12.683	1.043	15	8	1	7
		B		7.26Y	120.9	0.59	5.07	59.65	18	430	65	99					15	8	1	11
		C		7.31Y	121.9	0.46	4.10	54.60	16	398	49	99					15	8	1	7
1276a	1224	A	#6 HdCu -	7.25Y	120.8	1.41	5.23	52.42	44	382	38	100	13.66	1.2	13.396	0.713	0	0	0	7
		B		7.16Y	119.4	1.57	6.64	57.39	48	413	54	99					0	0	0	11
		C		7.23Y	120.5	1.37	5.46	52.36	44	381	39	99					0	0	0	7
REG1372	1276a	A	150 AMP	7.53Y	125.5	-4.71	0.52	52.42	35	378	36	100	percent Boost= 3.75 Tap= 6.0							7
		B		7.49Y	124.8	-5.46	1.18	57.39	38	408	52	99	percent Boost= 4.38 Tap= 7.0							11
		C		7.47Y	124.4	-3.89	1.58	52.36	35	377	37	100	percent Boost= 3.12 Tap= 5.0							7
1276	REG1372	A	#6 HdCu -	7.35Y	122.5	3.00	3.53	50.46	42	378	36	100	27.66	2.4	15.038	1.642	21	11	1	7
		B		7.29Y	121.5	3.35	4.54	54.88	46	408	52	99					21	11	1	11
		C		7.29Y	121.5	2.95	4.53	50.72	42	377	37	100					21	11	1	7
P CAP1480 P P	1276	A	Cap (150)	7.35Y	122.5	0.00	3.53	-7.09	0	0	-52	0	0.00	0.0	15.038	0.000	0	0	0	0 P
		B		7.29Y	121.5	0.00	4.54	-7.03	0	0	-51	0					0	0	0	0 P
		C		7.29Y	121.5	0.00	4.53	-7.03	0	0	-51	0					0	0	0	0 P
OH1423	1276	A	#6 HdCu -	7.27Y	121.2	1.28	4.80	48.38	40	348	74	98	10.77	1.0	15.776	0.738	44	23	1	6
		B		7.20Y	120.0	1.43	5.97	52.95	44	376	88	97					44	23	1	10
		C		7.21Y	120.2	1.25	5.78	48.65	41	347	74	98					44	23	1	6
REG1375	OH1423	A	100 AMP	7.46Y	124.3	-3.11	1.70	41.80	42	300	49	99	percent Boost= 2.50 Tap= 4.0							5
		B		7.48Y	124.7	-4.68	1.30	46.33	46	328	63	98	percent Boost= 3.75 Tap= 6.0							9
		C		7.45Y	124.1	-3.88	1.90	42.07	42	299	50	99	percent Boost= 3.12 Tap= 5.0							5
1226	REG1375	A	#6 HdCu -	7.40Y	123.3	0.99	2.68	40.76	34	300	49	99	7.01	0.8	16.464	0.688	41	21	1	5
		B		7.42Y	123.6	1.11	2.41	44.59	37	328	63	98					41	21	1	9
		C		7.39Y	123.1	0.96	2.86	40.75	34	299	50	99					41	21	1	5
P CAP1373 P P	1226	A	Cap (300)	7.40Y	123.3	0.00	2.68	-14.27	0	0	-106	0	0.00	0.0	16.464	0.000	0	0	0	0 P
		B		7.42Y	123.6	0.00	2.41	-14.30	0	0	-106	0					0	0	0	0 P
		C		7.39Y	123.1	0.00	2.86	-14.25	0	0	-105	0					0	0	0	0 P
1228	1226	A	#6 HdCu -	7.34Y	122.3	0.99	3.68	38.89	32	256	132	89	5.83	0.7	17.361	0.897	134	69	1	5
		B		7.35Y	122.4	1.15	3.56	42.92	36	283	146	89					134	69	1	9
		C		7.33Y	122.2	0.95	3.81	38.89	32	255	132	89					134	69	1	5
1278	1228	A	#6 HdCu -	7.32Y	121.9	0.39	4.07	17.96	15	117	61	89	1.13	0.3	18.189	0.828	76	39	2	4
		B		7.31Y	121.9	0.54	4.10	21.98	18	143	74	89					76	39	2	8
		C		7.31Y	121.8	0.35	4.16	17.96	15	117	61	89					76	39	2	4
1230	1278	A	#4 ACSR 6/	7.31Y	121.8	0.14	4.21	6.12	4	40	21	89	0.20	0.1	19.115	0.926	32	17	1	2
		B		7.30Y	121.6	0.31	4.41	10.14	7	66	34	89					32	17	1	6
		C		7.30Y	121.7	0.09	4.26	6.12	4	40	21	89					32	17	1	2
1298	1230	B	#4 ACSR 6/	7.27Y	121.1	0.48	4.88	4.02	3	26	14	88	0.09	0.3	22.105	2.990	9	5	2	4
1232	1298	B	#4 ACSR 6/	7.24Y	120.7	0.37	5.26	2.63	2	17	9	88	0.03	0.2	28.013	5.908	17	9	2	2
1296	1230	A	#4 ACSR 6/	7.31Y	121.8	0.03	4.23	1.09	1	7	4	87	0.00	0.0	20.451	1.336	7	4	1	1
		B		7.29Y	121.6	0.03	4.44	1.09	1	7	4	89					7	4	1	1
		C		7.30Y	121.7	0.03	4.29	1.09	1	7	4	89					7	4	1	1
1216	1292	A	#4 ACSR 6/	7.48Y	124.6	0.03	1.39	3.30	2	22	11	89	0.01	0.0	7.800	0.485	21	11	1	1
		B		7.43Y	123.9	0.03	2.15	3.30	2	22	11	89					21	11	1	1
		C		7.45Y	124.1	0.03	1.86	3.30	2	22	11	89					21	11	1	1

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
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		Units Displayed In Volts															-----Element-----			
		-Base Voltage:120.0-																		
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	KW	KVAR	Cons On	Cons Thru
P CAP1459 P	1208	A	Cap (450)	7.53Y	125.4	0.00	0.55	-21.78	0	0	-164	0	0.00	0.0	5.53I	0.000	0	0	0	0 P
		B		7.49Y	124.9	0.00	1.14	-21.68	0	0	-162	0					0	0	0	0 P
		C		7.50Y	124.9	0.00	1.08	-21.69	0	0	-163	0					0	0	0	0
1210	1208	A	#1/0 ACSR	7.44Y	124.0	1.44	1.99	49.99	22	333	175	89	12.62	1.2	7.259	1.728	37	19	1	2
		B		7.39Y	123.2	1.62	2.76	49.99	22	332	173	89					37	19	1	2
		C		7.36Y	122.7	2.19	3.27	62.85	27	417	220	88					37	19	1	6
1210-1218	1210	A	#4 ACSR 6/	7.43Y	123.8	0.18	2.17	12.11	9	80	41	89	0.36	0.2	7.629	0.371	0	0	0	1
		B		7.38Y	123.1	0.18	2.93	12.10	9	79	41	89					0	0	0	1
		C		7.35Y	122.6	0.18	3.45	12.10	9	79	41	89					0	0	0	1
1218	1210-1218	A	#4 ACSR 6/	7.42Y	123.7	0.16	2.33	12.11	9	80	41	89	0.22	0.1	8.310	0.680	77	40	1	1
		B		7.37Y	122.9	0.16	3.10	12.10	9	79	41	89					77	40	1	1
		C		7.34Y	122.4	0.16	3.61	12.10	9	79	41	89					77	40	1	1
1294	1210	A	#2 HdCu -	7.43Y	123.8	0.19	2.18	32.17	14	212	110	89	1.36	0.2	8.152	0.893	205	107	1	1
		B		7.38Y	123.0	0.28	3.04	32.17	14	211	110	89					205	107	1	1
		C		7.33Y	122.2	0.56	3.83	45.03	20	294	153	89					205	107	1	5
1220	1294	C	#4 ACSR 6/	7.31Y	121.9	0.31	4.14	12.86	9	84	43	89	0.14	0.2	9.148	0.996	82	43	4	4
----- Feeder No. 1000 (Fdr 1000) Beginning with Device Fdr 1000 -----																				
Fdr 1000	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	21.83	0	159	-43	-97	0.00	0.0	0.000	0.000	0	0	0	1
		B		7.56Y	126.0	0.00	0.00	21.83	0	159	-43	-97					0	0	0	1
		C		7.56Y	126.0	0.00	0.00	21.83	0	159	-43	-97					0	0	0	1
1004a	Fdr 1000	A	477 MCM AC	7.56Y	126.0	0.02	0.02	21.83	3	159	-43	-97	0.50	0.1	1.785	1.785	0	0	0	1
		B		7.56Y	126.0	0.02	0.02	21.83	3	159	-43	-97					0	0	0	1
		C		7.56Y	126.0	0.02	0.02	21.83	3	159	-43	-97					0	0	0	1
1004	1004a	A	#2 HdCu -	7.55Y	125.8	0.15	0.17	21.83	9	159	-44	-96	1.09	0.2	3.274	1.489	95	40	1	1
		B		7.55Y	125.8	0.15	0.17	21.83	9	159	-44	-96					95	40	1	1
		C		7.55Y	125.8	0.15	0.17	21.83	9	159	-44	-96					95	40	1	1
P CAP1305 P P	1004	A	Cap (300)	7.55Y	125.8	0.00	0.17	-14.56	0	0	-110	0	0.00	0.0	3.274	0.000	0	0	0	0 P
		B		7.55Y	125.8	0.00	0.17	-14.56	0	0	-110	0					0	0	0	0 P
		C		7.55Y	125.8	0.00	0.17	-14.56	0	0	-110	0					0	0	0	0 P
1060	1004	A	#2 HdCu -	7.54Y	125.7	0.09	0.26	8.40	4	59	24	93	0.07	0.0	4.479	1.205	56	23	1	1
		B		7.54Y	125.7	0.09	0.26	8.40	4	59	24	92					56	23	1	1
		C		7.54Y	125.7	0.09	0.26	8.40	4	59	24	92					56	23	1	1
----- Feeder No. 1200 (Fdr 1200) Beginning with Device Fdr 1200 -----																				
Fdr 1200	Cork Sub	A	Unknown	7.56Y	126.0	0.00	0.00	47.97	0	356	69	98	0.00	0.0	0.000	0.000	0	0	0	7
		B		7.56Y	126.0	0.00	0.00	47.97	0	356	69	98					0	0	0	7
		C		7.56Y	126.0	0.00	0.00	47.97	0	356	69	98					0	0	0	7
1201	Fdr 1200	A	#2 HdCu -	7.52Y	125.3	0.71	0.71	47.97	21	356	69	98	5.33	0.5	0.895	0.895	8	4	1	7
		B		7.52Y	125.3	0.71	0.71	47.97	21	356	69	98					8	4	1	7
		C		7.52Y	125.3	0.71	0.71	47.97	21	356	69	98					8	4	1	7
1286	1201	A	#6 HdCu -	7.51Y	125.2	0.05	0.76	2.71	2	18	9	89	0.02	0.0	1.875	0.980	17	9	1	1
		B		7.51Y	125.2	0.05	0.76	2.71	2	18	9	90					17	9	1	1
		C		7.51Y	125.2	0.05	0.76	2.71	2	18	9	90					17	9	1	1
1280	1201	A	#4 HdCu -	7.50Y	125.1	0.23	0.94	44.13	26	327	54	99	1.67	0.2	1.104	0.209	2	1	1	6
		B		7.50Y	125.1	0.23	0.94	44.13	26	327	54	99					2	1	1	6
		C		7.50Y	125.1	0.23	0.94	44.13	26	327	54	99					2	1	1	6
1284	1280	A	#6 HdCu -	7.46Y	124.3	0.73	1.67	40.39	34	300	41	99	4.98	0.6	1.597	0.493	17	8	1	5
		B		7.46Y	124.3	0.73	1.67	40.39	34	300	41	99					17	8	1	5
		C		7.46Y	124.3	0.73	1.67	40.39	34	300	41	99					17	8	1	5
CAP1376 P P	1284	A	Cap (300)	7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0	0.00	0.0	1.597	0.000	0	0	0	0
		B		7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0					0	0	0	0 P
		C		7.46Y	124.3	0.00	1.67	-14.39	0	0	-107	0					0	0	0	0 P
1251	1284	A	#4 HdCu -	7.43Y	123.8	0.53	2.20	42.00	25	281	139	90	3.44	0.4	2.076	0.479	4	2	1	4
		B		7.43Y	123.8	0.53	2.20	42.00	25	281	139	90					4	2	1	4
		C		7.43Y	123.8	0.53	2.20	42.00	25	281	139	90					4	2	1	4

KEY--> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

Unbalanced Voltage Drop Report
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Units Displayed In Volts																				
-Base Voltage:120.0-																				
Element Name	Parent Name	Cnf	Type/ Conductor	Pri kV	Base Volt	Element Drop	Accum Drop	Thru Amps	% Cap	Thru KW	KVAR	% PF	kW Loss	% Loss	mi From Src	Length (mi)	-----Element-----			
																	KW	KVAR	On	Thru
1252	1251	A	#6 HdCu -	7.40Y	123.4	0.45	2.64	5.91	5	39	19	90	0.30	0.3	5.980	3.904	38	19	1	1
		B		7.40Y	123.4	0.45	2.64	5.91	5	39	19	90					38	19	1	1
		C		7.40Y	123.4	0.45	2.64	5.91	5	39	19	90					38	19	1	1
1256	1251	A	#6 HdCu -	7.35Y	122.5	1.28	3.48	35.44	30	236	116	90	5.89	0.8	3.503	1.427	158	78	1	3
		B		7.35Y	122.5	1.28	3.48	35.44	30	236	116	90					158	78	1	3
		C		7.35Y	122.5	1.28	3.48	35.44	30	236	116	90					158	78	1	3
1260a	1256	A	#6 HdCu -	7.32Y	122.1	0.46	3.94	10.90	9	72	35	90	0.85	0.4	4.596	1.094	0	0	0	1
		B		7.32Y	122.1	0.46	3.94	10.90	9	72	35	90					0	0	0	1
		C		7.32Y	122.1	0.46	3.94	10.90	9	72	35	90					0	0	0	1
1260b	1260a	A	#1/0 ACSR	7.32Y	121.9	0.12	4.06	10.90	5	72	35	90	0.18	0.1	5.172	0.576	0	0	0	1
		B		7.32Y	121.9	0.12	4.06	10.90	5	72	35	90					0	0	0	1
		C		7.32Y	121.9	0.12	4.06	10.90	5	72	35	90					0	0	0	1
1260	1260b	A	#6 HdCu -	7.30Y	121.6	0.33	4.39	10.90	9	71	35	90	0.41	0.2	6.748	1.576	70	35	1	1
		B		7.30Y	121.6	0.33	4.39	10.90	9	71	35	90					70	35	1	1
		C		7.30Y	121.6	0.33	4.39	10.90	9	71	35	90					70	35	1	1
1282	1280	A	#6 HdCu -	7.50Y	125.0	0.07	1.01	3.67	3	25	12	90	0.03	0.0	2.157	1.053	24	12	1	1
		B		7.50Y	125.0	0.07	1.01	3.67	3	25	12	90					24	12	1	1
		C		7.50Y	125.0	0.07	1.01	3.67	3	25	12	90					24	12	1	1

KEY-> L = Low Voltage H = High Voltage C = Capacity Over Limit (%capacity or load amps) G = Generator Out of kvar Limits P = Power Factor Low

	Load	Adjustment	Capacitance	Charging	Gen&Motors	Loops&Metas	Losses	No Load	Losses	Total
KW	4397	125	0	0	0	0	296		0.00	4818
KVAR	2211	62	-2250	0	0	0	387			410

Lowest Voltage	Highest Accumulated Voltage Drop	Highest Element Voltage Drop
A-Phase -> 120.77 volts on 1276a	5.23 volts on 1276a	3.00 volts on 1276
B-Phase -> 119.36 volts on 1276a	6.64 volts on 1276a	3.74 volts on 1202
C-Phase -> 118.76 volts on 1204	7.24 volts on 1204	4.16 volts on 1202

APPENDIX B

Economic Analyses

Graham County

CWP Project Comparison - Pima Substation

Investment Rate:	6.00%	Present Value of One kW of Loss for Financial Period
Fixed Charge Rate:	9.71%	
\$/kW/Year of Loss:	\$153.60	
Inflation/Power Cost/Growth:	6.00%	
Years to Finance:	35	
		\$5,071.70

Option 1

Description:

No Changes to System

Cost of Construction	kW Losses	Present Worth
\$0	1,003.00	\$5,086,913

Option 2

Description:

Build Pima Substation 12/6/20 MVA, build 0.75 miles of double circuit 477 MCM
ACSR to form two circuits, convert 1.25 miles of to 477 MCM ACSR

Cost of Construction	kW Losses	Present Worth
\$1,508,750	132.00	\$2,879,715

Graham County

CWP Project Comparison - Swift Trails Circuit 8000 line conversion

Investment Rate:	6.00%	Present Value of One kW of Loss for Financial Period
Fixed Charge Rate:	9.71%	
\$/kW/Year of Loss:	\$153.60	
Inflation/Power Cost/Growth:	6.00%	
Years to Finance:	35	\$5,071.70

Option 1

Description:

No Changes to System

Cost of Construction	kW Losses	Present Worth
\$0	71.00	\$360,091

Option 2

Description:

Convert 2.3 miles of line to 4/0 ACSR conductor

Cost of Construction	kW Losses	Present Worth
\$138,000	41.00	\$410,103

Graham County Electric Cooperative Inc.
ECONOMIC CONDUCTOR ANALYSIS

New 3-Phase 24.94/14.4 kV Construction

Three Phase Line Annual Cost Comparison

Lifetime of New Line (Years)		35	CONDUCTORS											
			#4		#1/0		#4/0		556.5 MCM		795 MCM			
		kW	Load	% Ld	ACSR	% Ld	ACSR	% Ld	ACSR	% Ld	ACSR	% Ld	ACSR	
kW Load Increment kW:		100	400	13%	\$3,429	8%	\$3,560	5%	\$4,233	3%	\$5,693	2%	\$7,193	
Distance of Line (miles)		1.000	500	17%	\$3,660	10%	\$3,651	7%	\$4,279	3%	\$5,710	3%	\$7,205	
			600	20%	\$3,942	12%	\$3,763	8%	\$4,335	4%	\$5,731	3%	\$7,220	
Interest Rate (Decimal)		5.75%	700	23%	\$4,275	14%	\$3,895	10%	\$4,401	5%	\$5,756	4%	\$7,237	
Annual Tax Rate (Decimal)		0.83%	800	26%	\$4,659	16%	\$4,047	11%	\$4,478	5%	\$5,785	4%	\$7,257	
Annual Depreciation Rate (Decimal)		2.88%	900	30%	\$5,094	18%	\$4,220	12%	\$4,564	6%	\$5,817	5%	\$7,280	
Annual Fixed Charge Rate (Total)		9.46%	1,000	33%	\$5,581	20%	\$4,413	14%	\$4,661	7%	\$5,854	5%	\$7,305	
			1,100	36%	\$6,119	22%	\$4,626	15%	\$4,768	8%	\$5,894	6%	\$7,334	
Line Load Factor (Decimal)		0.5647	1,200	40%	\$6,708	24%	\$4,859	16%	\$4,885	8%	\$5,938	6%	\$7,364	
			1,300	43%	\$7,348	26%	\$5,113	18%	\$5,012	9%	\$5,986	7%	\$7,398	
System Power Factor (Decimal)		95.00%	1,400	46%	\$8,040	28%	\$5,387	19%	\$5,149	10%	\$6,037	7%	\$7,434	
			1,500	50%	\$8,783	30%	\$5,682	20%	\$5,297	10%	\$6,093	8%	\$7,473	
Line to Ground Voltage (kV)		7.20	1,600	53%	\$9,577	32%	\$5,997	22%	\$5,455	11%	\$6,152	8%	\$7,514	
			1,700	56%	\$10,422	34%	\$6,332	23%	\$5,623	12%	\$6,216	9%	\$7,558	
Demand Charge (\$/kW/Month)			1,800	60%	\$11,319	36%	\$6,687	25%	\$5,801	12%	\$6,283	9%	\$7,605	
			1,900	63%	\$12,266	38%	\$7,063	26%	\$5,989	13%	\$6,354	10%	\$7,655	
Energy Charge (\$/KWh)		\$0.05114	2,000	66%	\$13,265	40%	\$7,459	27%	\$6,187	14%	\$6,428	10%	\$7,707	
			2,100	69%	\$14,315	42%	\$7,875	29%	\$6,396	14%	\$6,507	11%	\$7,762	
Demand Adjustment Factor (Decimal)			2,200	73%	\$15,417	44%	\$8,312	30%	\$6,615	15%	\$6,589	11%	\$7,819	
			2,300	76%	\$16,569	46%	\$8,769	31%	\$6,844	16%	\$6,676	12%	\$7,879	
Line Loss Factor (Decimal)		0.3582	2,400	79%	\$17,773	48%	\$9,246	33%	\$7,083	16%	\$6,766	12%	\$7,942	
			2,500	83%	\$19,028	50%	\$9,743	34%	\$7,332	17%	\$6,860	13%	\$8,008	
Construction Costs and Conductor Properties			2,600	86%	\$20,335	52%	\$10,261	35%	\$7,592	18%	\$6,957	13%	\$8,076	
Wire Size	Dollars per Mile	Resistance Ohms/Mile	Ampacity	2,700	89%	\$21,692	54%	\$10,799	37%	\$7,862	19%	\$7,059	14%	\$8,147
#4	\$40,000	2.2400	140	2,800	93%	\$23,101	56%	\$11,358	38%	\$8,141	19%	\$7,164	14%	\$8,221
#1/0	\$45,000	0.8880	230	2,900			58%	\$11,937	39%	\$8,431	20%	\$7,274	15%	\$8,297
#4/0	\$55,000	0.4450	340	3,000			60%	\$12,536	41%	\$8,732	21%	\$7,387	15%	\$8,376
556.5 MCM	\$75,000	0.1676	711	3,100			62%	\$13,155	42%	\$9,042	21%	\$7,504	16%	\$8,457
795 MCM	\$95,000	0.1170	900	3,200			64%	\$13,795	44%	\$9,363	22%	\$7,624	16%	\$8,542
				3,300			66%	\$14,455	45%	\$9,693	23%	\$7,749	17%	\$8,629
				3,400			68%	\$15,135	46%	\$10,034	23%	\$7,877	17%	\$8,718
\$160.48 annual cost per kW of loss				3,500			70%	\$15,836	48%	\$10,385	24%	\$8,010	18%	\$8,811
				3,600			72%	\$16,557	49%	\$10,747	25%	\$8,146	19%	\$8,906
Total Expenses per mile of line =				3,700			74%	\$17,298	50%	\$11,118	25%	\$8,286	19%	\$9,003
				3,800			76%	\$18,060	52%	\$11,500	26%	\$8,429	20%	\$9,104
Wire Size	Ann. Loan Payment	Annual Expense		3,900			79%	\$18,842	53%	\$11,892	27%	\$8,577	20%	\$9,207
#4	\$2,679	\$3,020		4,000			81%	\$19,644	54%	\$12,294	27%	\$8,728	21%	\$9,312
#1/0	\$3,013	\$3,397		4,100			83%	\$20,466	56%	\$12,706	28%	\$8,883	21%	\$9,421
#4/0	\$3,683	\$4,152		4,200			85%	\$21,309	57%	\$13,128	29%	\$9,043	22%	\$9,532
556.5 MCM	\$5,022	\$5,662		4,300			87%	\$22,172	59%	\$13,561	29%	\$9,205	22%	\$9,645
795 MCM	\$6,361	\$7,172		4,400			89%	\$23,056	60%	\$14,003	30%	\$9,372	23%	\$9,762
				4,500			91%	\$23,959	61%	\$14,456	31%	\$9,543	23%	\$9,881
				4,600			93%	\$24,883	63%	\$14,919	32%	\$9,717	24%	\$10,003
				4,700			95%	\$25,828	64%	\$15,393	32%	\$9,895	24%	\$10,127
				4,800					65%	\$15,876	33%	\$10,077	25%	\$10,254

Graham County Electric Cooperative Inc.
ECONOMIC CONDUCTOR REPLACEMENT ANALYSIS

REPLACEMENT OF #4 ACSR									
Lifetime of New Line (Years)		35							
			kw		Conductors				
kW Load Increment kW:	100	Load	% Ld	#4	#1.0	#4/0	556.5 MCM	795 MCM	
		1,000	35%	\$2,561	\$4,413	\$4,661	\$5,854	\$7,305	
Distance of Line (miles)	1.000	1,100	38%	\$3,099	\$4,626	\$4,768	\$5,894	\$7,334	
		1,200	42%	\$3,688	\$4,859	\$4,885	\$5,938	\$7,364	
Interest Rate (Decimal)	5.75%	1,300	45%	\$4,329	\$5,113	\$5,012	\$5,986	\$7,398	
Annual Tax Rate (Decimal)	0.83%	1,400	49%	\$5,020	\$5,387	\$5,149	\$6,037	\$7,434	
Annual Depreciation Rate (Decimal)	2.88%	1,500	52%	\$5,763	\$5,682	\$5,297	\$6,093	\$7,473	
Annual Fixed Charge Rate (Total)	9.46%	1,600	56%	\$6,557	\$5,997	\$5,455	\$6,152	\$7,514	
		1,700	59%	\$7,402	\$6,332	\$5,623	\$6,216	\$7,558	
Line Load Factor (Decimal)	0.5647	1,800	63%	\$8,299	\$6,687	\$5,801	\$6,283	\$7,605	
		1,900	66%	\$9,247	\$7,063	\$5,989	\$6,354	\$7,655	
System Power Factor (Decimal)	95.00%	2,000	70%	\$10,246	\$7,459	\$6,187	\$6,428	\$7,707	
		2,100	73%	\$11,296	\$7,875	\$6,396	\$6,507	\$7,762	
Line to Ground Voltage (kV)	7.20	2,200	77%	\$12,397	\$8,312	\$6,615	\$6,589	\$7,819	
		2,300	80%	\$13,550	\$8,769	\$6,844	\$6,676	\$7,879	
Demand Charge (\$/kW/Month)	-	2,400	84%	\$14,754	\$9,246	\$7,083	\$6,766	\$7,942	
		2,500	87%	\$16,009	\$9,743	\$7,332	\$6,860	\$8,008	
Energy Charge (\$/kWh)	\$0.05114	2,600	91%	\$17,315	\$10,261	\$7,592	\$6,957	\$8,076	
		2,700	94%	\$18,673	\$10,799	\$7,862	\$7,059	\$8,147	
Demand Adjustment Factor (Decimal)	0.0000	2,800	97%	\$20,081	\$11,358	\$8,141	\$7,164	\$8,221	
		2,900			\$11,937	\$8,431	\$7,274	\$8,297	
Line Loss Factor (Decimal)	0.3582	3,000			\$12,536	\$8,732	\$7,387	\$8,376	
		3,100			\$13,155	\$9,042	\$7,504	\$8,457	
Construction Costs and Conductor Properties		3,200			\$13,795	\$9,363	\$7,624	\$8,542	
Wire Size	Dollars per Mile	Resistance Ohms/Mile	Ampacity	3,300	\$14,455	\$9,693	\$7,749	\$8,629	
#4		2.2400	140	3,400	\$15,135	\$10,034	\$7,877	\$8,718	
#1.0	\$45,000	0.8880	230	3,500	\$15,836	\$10,385	\$8,010	\$8,811	
#4/0	\$55,000	0.4450	340	3,600	\$16,557	\$10,747	\$8,146	\$8,906	
556.5 MCM	\$75,000	0.1676	711	3,700	\$17,298	\$11,118	\$8,286	\$9,003	
795 MCM	\$95,000	0.1170	900	3,800	\$18,060	\$11,500	\$8,429	\$9,104	
				3,900	\$18,842	\$11,892	\$8,577	\$9,207	
				4,000	\$19,644	\$12,294	\$8,728	\$9,312	
\$160.48 annual cost per kW of loss		4,100			\$20,466	\$12,706	\$8,883	\$9,421	
		4,200			\$21,309	\$13,128	\$9,043	\$9,532	
Total Expenses per mile of line =		4,300			\$22,172	\$13,561	\$9,205	\$9,645	
		4,400			\$23,056	\$14,003	\$9,372	\$9,762	
Wire Size	Ann. Loan Payment	Annual Expense		4,500	\$23,959	\$14,456	\$9,543	\$9,881	
#4	\$0	\$0		4,600	\$24,883	\$14,919	\$9,717	\$10,003	
#1.0	\$3,013	\$3,397		4,700	\$25,828	\$15,393	\$9,895	\$10,127	
#4/0	\$3,683	\$4,152		4,800		\$15,876	\$10,077	\$10,254	
556.5 MCM	\$5,022	\$5,662		4,900		\$16,370	\$10,263	\$10,384	
795 MCM	\$6,361	\$7,172		5,000		\$16,873	\$10,453	\$10,516	
				5,100		\$17,387	\$10,647	\$10,651	
				5,200		\$17,911	\$10,844	\$10,789	
				5,300		\$18,446	\$11,045	\$10,930	
				5,400		\$18,990	\$11,250	\$11,073	

Graham County Electric Cooperative Inc.
ECONOMIC CONDUCTOR REPLACEMENT ANALYSIS

REPLACEMENT OF #2 ACSR									
Lifetime of New Line (Years)	35								
		kw		Conductors					
kW Load Increment kW:	100	Load	% Ld	#2	#1/0	4/0	556.5 MCM	795 MCM	
		1,000	27%	\$1,612	\$4,413	\$4,661	\$5,854	\$7,305	
Distance of Line (miles)	1.000	1,100	30%	\$1,951	\$4,626	\$4,768	\$5,894	\$7,334	
		1,200	32%	\$2,322	\$4,859	\$4,885	\$5,938	\$7,364	
Interest Rate (Decimal)	5.75%	1,300	35%	\$2,725	\$5,113	\$5,012	\$5,986	\$7,398	
Annual Tax Rate (Decimal)	0.83%	1,400	38%	\$3,160	\$5,387	\$5,149	\$6,037	\$7,434	
Annual Depreciation Rate (Decimal)	2.88%	1,500	41%	\$3,628	\$5,682	\$5,297	\$6,093	\$7,473	
Annual Fixed Charge Rate (Total)	9.46%	1,600	43%	\$4,128	\$5,997	\$5,455	\$6,152	\$7,514	
		1,700	46%	\$4,660	\$6,332	\$5,623	\$6,216	\$7,558	
Line Load Factor (Decimal)	0.5647	1,800	49%	\$5,224	\$6,687	\$5,801	\$6,283	\$7,605	
		1,900	51%	\$5,820	\$7,063	\$5,989	\$6,354	\$7,655	
System Power Factor (Decimal)	95.00%	2,000	54%	\$6,449	\$7,459	\$6,187	\$6,428	\$7,707	
		2,100	57%	\$7,110	\$7,875	\$6,396	\$6,507	\$7,762	
Line to Ground Voltage (kV)	7.20	2,200	60%	\$7,804	\$8,312	\$6,615	\$6,589	\$7,819	
		2,300	62%	\$8,529	\$8,769	\$6,844	\$6,676	\$7,879	
* Demand Charge (\$/kW/Month)	-	2,400	65%	\$9,287	\$9,246	\$7,083	\$6,766	\$7,942	
		2,500	68%	\$10,077	\$9,743	\$7,332	\$6,860	\$8,008	
Energy Charge (\$/kWh)	\$0.05114	2,600	70%	\$10,899	\$10,261	\$7,592	\$6,957	\$8,076	
		2,700	73%	\$11,754	\$10,799	\$7,862	\$7,059	\$8,147	
Demand Adjustment Factor (Decimal)	0.0511	2,800	76%	\$12,641	\$11,358	\$8,141	\$7,164	\$8,221	
		2,900	79%	\$13,560	\$11,937	\$8,431	\$7,274	\$8,297	
Line Loss Factor (Decimal)	0.3582	3,000	81%	\$14,511	\$12,536	\$8,732	\$7,387	\$8,376	
		3,100	84%	\$15,494	\$13,155	\$9,042	\$7,504	\$8,457	
Construction Costs and Conductor Properties		3,200	87%	\$16,510	\$13,795	\$9,363	\$7,624	\$8,542	
Wire Size	Dollars per Mile	Resistance Ohms/Mile	Ampacity	3,300	\$17,558	\$14,455	\$9,693	\$7,749	\$8,629
#2		1.4100	180	3,400	\$18,638	\$15,135	\$10,034	\$7,877	\$8,718
#1/0	\$45,000	0.8880	230	3,500	\$19,751	\$15,836	\$10,385	\$8,010	\$8,811
4/0	\$55,000	0.4450	340	3,600	\$20,896	\$16,557	\$10,747	\$8,146	\$8,906
556.5 MCM	\$75,000	0.1676	711	3,700		\$17,298	\$11,118	\$8,286	\$9,003
795 MCM	\$95,000	0.1170	900	3,800		\$18,060	\$11,500	\$8,429	\$9,104
				3,900		\$18,842	\$11,892	\$8,577	\$9,207
				4,000		\$19,644	\$12,294	\$8,728	\$9,312
\$160.48 annual cost per kW of loss				4,100		\$20,466	\$12,706	\$8,883	\$9,421
				4,200		\$21,309	\$13,128	\$9,043	\$9,532
Total Expenses per mile of line =	\$0			4,300		\$22,172	\$13,561	\$9,205	\$9,645
				4,400		\$23,056	\$14,003	\$9,372	\$9,762
Wire Size	Ann. Loan Payment	Annual Expense		4,500		\$23,959	\$14,456	\$9,543	\$9,881
#2	\$0	\$0		4,600		\$24,883	\$14,919	\$9,717	\$10,003
#1/0	\$3,013	\$3,397		4,700		\$25,828	\$15,393	\$9,895	\$10,127
4/0	\$3,683	\$4,152		4,800			\$15,876	\$10,077	\$10,254
556.5 MCM	\$5,022	\$5,662		4,900			\$16,370	\$10,263	\$10,384
795 MCM	\$6,361	\$7,172		5,000			\$16,873	\$10,453	\$10,516
				5,100			\$17,387	\$10,647	\$10,651
				5,200			\$17,911	\$10,844	\$10,789
				5,300			\$18,446	\$11,045	\$10,930
				5,400			\$18,990	\$11,250	\$11,073

Graham County Electric Cooperative Inc.
ECONOMIC CONDUCTOR REPLACEMENT ANALYSIS

REPLACEMENT OF #1/0 ACSR									
Lifetime of New Line (Years)	35								
		kw		Conductors					
kW Load Increment kW:	100	Load	% Ld	1/0	4/0	556.5 MCM	795 MCM		
Distance of Line (miles)	1.000	1,500	32%	\$2,285	\$5,297	\$6,093	\$7,473		
Interest Rate (Decimal)	5.75%	1,600	34%	\$2,599	\$5,455	\$6,152	\$7,514		
Annual Tax Rate (Decimal)	0.83%	1,700	36%	\$2,935	\$5,623	\$6,216	\$7,558		
Annual Depreciation Rate (Decimal)	2.88%	1,800	38%	\$3,290	\$5,801	\$6,283	\$7,605		
Annual Fixed Charge Rate (Total)	9.46%	1,900	40%	\$3,666	\$5,989	\$6,354	\$7,655		
Line Load Factor (Decimal)	0.5647	2,000	42%	\$4,062	\$6,187	\$6,428	\$7,707		
System Power Factor (Decimal)	95.00%	2,100	44%	\$4,478	\$6,396	\$6,507	\$7,762		
Line to Ground Voltage (kV)	7.20	2,200	47%	\$4,915	\$6,615	\$6,589	\$7,819		
* Demand Charge (\$/kW/Month)	-	2,300	49%	\$5,372	\$6,844	\$6,676	\$7,879		
Energy Charge (\$/kWh)	\$0.05114	2,400	51%	\$5,849	\$7,083	\$6,766	\$7,942		
Demand Adjustment Factor (Decimal)	0.0000	2,500	53%	\$6,346	\$7,332	\$6,860	\$8,008		
Line Loss Factor (Decimal)	0.3582	2,600	55%	\$6,864	\$7,592	\$6,957	\$8,076		
Construction Costs and Conductor Properties		2,700	57%	\$7,402	\$7,862	\$7,059	\$8,147		
Wire	Dollars	Resistance		2,800	59%	\$7,961	\$8,141	\$7,164	\$8,221
Size	per Mile	Ohms/Mile	Ampacity	2,900	61%	\$8,540	\$8,431	\$7,274	\$8,297
1/0		0.8880	230	3,000	64%	\$9,139	\$8,732	\$7,387	\$8,376
4/0	\$55,000	0.4450	340	3,100	66%	\$9,758	\$9,042	\$7,504	\$8,457
556.5 MCM	\$75,000	0.1676	711	3,200	68%	\$10,398	\$9,363	\$7,624	\$8,542
795 MCM	\$95,000	0.1170	900	3,300	70%	\$11,058	\$9,693	\$7,749	\$8,629
		3,400	72%	\$11,738	\$10,034	\$7,877	\$8,718		
		3,500	74%	\$12,439	\$10,385	\$8,010	\$8,811		
		3,600	76%	\$13,160	\$10,747	\$8,146	\$8,906		
		3,700	78%	\$13,901	\$11,118	\$8,286	\$9,003		
		3,800	81%	\$14,663	\$11,500	\$8,429	\$9,104		
		3,900	83%	\$15,444	\$11,892	\$8,577	\$9,207		
		4,000	85%	\$16,247	\$12,294	\$8,728	\$9,312		
		4,100	87%	\$17,069	\$12,706	\$8,883	\$9,421		
		4,200	89%	\$17,912	\$13,128	\$9,043	\$9,532		
		4,300	91%	\$18,775	\$13,561	\$9,205	\$9,645		
		4,400	93%	\$19,658	\$14,003	\$9,372	\$9,762		
		4,500	95%	\$20,562	\$14,456	\$9,543	\$9,881		
		4,600	97%	\$21,486	\$14,919	\$9,717	\$10,003		
		4,700	100%	\$22,430	\$15,393	\$9,895	\$10,127		
\$160.48 annual cost per kW of loss		4,800			\$15,876	\$10,077	\$10,254		
Total Expenses per mile of line =		4,900			\$16,370	\$10,263	\$10,384		
Wire	Ann. Loan	Annual		5,000		\$16,873	\$10,453	\$10,516	
Size	Payment	Expense		5,100		\$17,387	\$10,647	\$10,651	
1/0	\$0	\$0		5,200		\$17,911	\$10,844	\$10,789	
4/0	\$3,683	\$4,152		5,300		\$18,446	\$11,045	\$10,930	
556.5 MCM	\$5,022	\$5,662		5,400		\$18,990	\$11,250	\$11,073	
795 MCM	\$6,361	\$7,172		5,500		\$19,545	\$11,459	\$11,219	
		5,600				\$20,110	\$11,672	\$11,367	
		5,700				\$20,685	\$11,888	\$11,518	
		5,800				\$21,270	\$12,109	\$11,672	
		5,900				\$21,865	\$12,333	\$11,829	

Graham County Electric Cooperative Inc.
ECONOMIC CONDUCTOR REPLACEMENT ANALYSIS

REPLACEMENT OF #4/0 ACSR										
Lifetime of New Line (Years)		35								
			kw		Conductors					
kW Load Increment kW:		100	Load	% Ld	4/0	556.5 MCM	795 MCM			
			3,000	43.0%	\$4,580	\$7,387	\$8,376			
Distance of Line (miles)		1.000	3,100	44.4%	\$4,890	\$7,504	\$8,457			
			3,200	45.9%	\$5,211	\$7,624	\$8,542			
Interest Rate (Decimal)		5.75%	3,300	47.3%	\$5,541	\$7,749	\$8,629			
Annual Tax Rate (Decimal)		0.83%	3,400	48.7%	\$5,882	\$7,877	\$8,718			
Annual Depreciation Rate (Decimal)		2.88%	3,500	50.2%	\$6,233	\$8,010	\$8,811			
Annual Fixed Charge Rate (Total)		9.46%	3,600	51.6%	\$6,595	\$8,146	\$8,906			
			3,700	53.0%	\$6,966	\$8,286	\$9,003			
Line Load Factor (Decimal)		0.5647	3,800	54.5%	\$7,348	\$8,429	\$9,104			
			3,900	55.9%	\$7,740	\$8,577	\$9,207			
System Power Factor (Decimal)		95.00%	4,000	57.3%	\$8,142	\$8,728	\$9,312			
			4,100	58.8%	\$8,554	\$8,883	\$9,421			
Line to Ground Voltage (kV)		7.20	4,200	60.2%	\$8,976	\$9,043	\$9,532			
			4,300	61.6%	\$9,409	\$9,205	\$9,645			
* Demand Charge (\$/kW/Month)		-	4,400	63.1%	\$9,851	\$9,372	\$9,762			
			4,500	64.5%	\$10,304	\$9,543	\$9,881			
Energy Charge (\$/kWh)		\$0.05114	4,600	65.9%	\$10,767	\$9,717	\$10,003			
			4,700	67.4%	\$11,241	\$9,895	\$10,127			
Demand Adjustment Factor (Decimal)		0.0000	4,800	68.8%	\$11,724	\$10,077	\$10,254			
			4,900	70.2%	\$12,217	\$10,263	\$10,384			
Line Loss Factor (Decimal)		0.3582	5,000	71.7%	\$12,721	\$10,453	\$10,516			
			5,100	73.1%	\$13,235	\$10,647	\$10,651			
Construction Costs and Conductor Properties			5,200	74.5%	\$13,759	\$10,844	\$10,789			
Wire	Dollars	Resistance								
Size	per Mile	Ohms/Mile	Ampacity	5,300	76.0%	\$14,294	\$11,045	\$10,930		
4/0		0.4450	340	5,400	77.4%	\$14,838	\$11,250	\$11,073		
556.5 MCM	\$75,000	0.1676	711	5,500	78.8%	\$15,393	\$11,459	\$11,219		
795 MCM	\$95,000	0.1170	900	5,600	80.3%	\$15,958	\$11,672	\$11,367		
				5,700	81.7%	\$16,533	\$11,888	\$11,518		
				5,800	83.1%	\$17,118	\$12,109	\$11,672		
				5,900	84.6%	\$17,713	\$12,333	\$11,829		
				6,000	86.0%	\$18,319	\$12,561	\$11,988		
\$160.48 annual cost per kW of loss			6,100	87.4%	\$18,934	\$12,793	\$12,150			
			6,200	88.9%	\$19,560	\$13,029	\$12,314			
Total Expenses per mile of line =			\$0	6,300	90.3%	\$20,196	\$13,268	\$12,482		
				6,400	91.7%	\$20,843	\$13,512	\$12,652		
Wire	Ann. Loan	Annual								
Size	Payment	Expense								
4/0	\$0	\$0								
556.5 MCM	\$5,022	\$5,662								
795 MCM	\$6,361	\$7,172								

**AUDITED FINANCIAL STATEMENTS
YEARS 2009 AND 2008**

ARIZONA 17 GRAHAM

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

PIMA, ARIZONA

FINANCIAL STATEMENTS WITH ACCOMPANYING INFORMATION

FOR THE YEARS ENDED SEPTEMBER 30, 2009 AND 2008

AND

REPORT OF CERTIFIED PUBLIC ACCOUNTANTS

BOLINGER, SEGARS, GILBERT & MOSS, L.L.P.

**CERTIFIED PUBLIC ACCOUNTANTS
LUBBOCK, TEXAS**

**ARIZONA 17 GRAHAM
GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.
PIMA, ARIZONA**

**FINANCIAL STATEMENTS WITH ACCOMPANYING INFORMATION
FOR THE YEARS ENDED SEPTEMBER 30, 2009 AND 2008**

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BOLINGER, SEGARS, GILBERT & MOSS, L.L.P.

CERTIFIED PUBLIC ACCOUNTANTS

PHONE: (806) 747-3808

FAX: (806) 747-3815

8215 NASHVILLE AVENUE

LUBBOCK, TEXAS 79423-1054

INDEPENDENT AUDITORS' REPORT

Board of Directors
Graham County Electric Cooperative, Inc.
Pima, Arizona

We have audited the accompanying balance sheets of Graham County Electric Cooperative, Inc. as of September 30, 2009 and 2008, and the related statements of income and patronage capital, and cash flows for the years then ended. These financial statements are the responsibility of the Cooperative's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Graham County Electric Cooperative, Inc. as of September 30, 2009 and 2008, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Bolinger, Segars, Gilbert & Moss LLP

Certified Public Accountants

November 23, 2009

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Exhibit A

BALANCE SHEET
SEPTEMBER 30, 2009 AND 2008

ASSETS

	September 30,	
	2009	2008
UTILITY PLANT AT COST		
Electric Plant in Service	\$ 35,498,055	\$ 32,457,427
Construction Work in Progress	274,702	1,555,334
	<u>\$ 35,772,757</u>	<u>\$ 34,012,761</u>
Less: Accumulated Provision for Depreciation	12,484,585	11,906,120
	<u>\$ 23,288,172</u>	<u>\$ 22,106,641</u>
OTHER PROPERTY AND INVESTMENTS AT COST OR STATED VALUE		
Investments in Associated Organizations	\$ 6,323,348	\$ 4,095,966
Notes Receivable Less Current Portion		17,947
	<u>\$ 6,323,348</u>	<u>\$ 4,113,913</u>
CURRENT ASSETS		
Cash - General	\$ 1,475,510	\$ 580,635
Current Portion of Notes Receivable	18,203	41,728
Accounts Receivable (Less allowance for uncollectibles of \$127,540 in 2009 and \$108,030 in 2008)	1,760,894	1,717,569
Accounts Receivable - Graham County Utilities, Inc.	1,340,164	817,698
Under Recovered Fuel Cost		153,234
Materials and Supplies	975,290	1,002,336
Other Current and Accrued Assets	42,318	39,713
	<u>\$ 5,612,379</u>	<u>\$ 4,352,913</u>
DEFERRED CHARGES	<u>\$ 366,718</u>	<u>\$ 356,519</u>
TOTAL ASSETS	<u>\$ 35,590,617</u>	<u>\$ 30,929,986</u>

EQUITIES AND LIABILITIES

EQUITIES		
Memberships	\$ 31,855	\$ 30,322
Patronage Capital	14,069,900	10,749,123
Other Equities	1,364	1,364
Accumulated Other Comprehensive Income (Loss)	(1,282,456)	(934,010)
	<u>\$ 12,820,663</u>	<u>\$ 9,846,799</u>
LONG-TERM DEBT		
CFC Mortgage Notes Less Current Maturities	\$ 17,889,396	\$ 16,731,708
NRECA Past Service Retirement Cost Less Current Maturities	108,139	128,295
	<u>\$ 17,997,535</u>	<u>\$ 16,860,003</u>
POST RETIREMENT BENEFITS OTHER THAN PENSIONS	<u>\$ 1,586,724</u>	<u>\$ 1,193,944</u>
CURRENT LIABILITIES		
Current Maturities of Long-Term Debt	\$ 340,056	\$ 266,263
Accounts Payable - Purchased Power	1,342,242	1,091,092
Accounts Payable - Other	162,304	664,627
Over Recovered Fuel Cost	260,271	
Accrued Taxes	371,357	341,691
Accrued Interest	25,924	24,976
Consumer Deposits and Prepayments	179,877	174,787
Accrued Compensated Absences	362,384	346,135
Other Current and Accrued Liabilities	133,497	111,888
	<u>\$ 3,177,912</u>	<u>\$ 3,021,459</u>
DEFERRED CREDITS	<u>\$ 7,783</u>	<u>\$ 7,781</u>
TOTAL EQUITIES AND LIABILITIES	<u>\$ 35,590,617</u>	<u>\$ 30,929,986</u>

See accompanying notes to financial statements.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Exhibit B

STATEMENT OF INCOME AND PATRONAGE CAPITAL
FOR THE YEARS ENDED SEPTEMBER 30, 2009 AND 2008

	Years Ended September 30,				
	2009		2008		Increase (Decrease)
	Amount	%	Amount	%	
OPERATING REVENUES					
Residential	\$ 10,431,330	50.7	\$ 8,772,976	50.8	\$ 1,658,354
Irrigation	2,407,109	11.7	1,524,173	8.8	882,936
Commercial and Industrial	7,623,962	37.1	6,478,565	37.5	1,145,397
Public Street and Highway Lighting	17,787	0.1	13,345	0.1	4,442
Power Cost - Under (Over) Billed	(413,505)	(2.0)	30,898	0.2	(444,403)
Rent from Electric Property	137,842	0.7	123,543	0.7	14,299
Other Operating Revenues	359,513	1.7	323,645	1.9	35,868
Fuel Costs Over Recovered	\$ 20,564,038	100.0	\$ 17,267,145	100.0	\$ 3,296,893
OPERATING EXPENSES					
Purchased Power	\$ 14,104,478	68.6	\$ 11,736,801	68.0	\$ 2,367,677
Operation	606,488	2.9	591,612	3.4	14,876
Maintenance	1,145,846	5.6	1,457,094	8.4	(311,248)
Customer Accounts	483,024	2.3	425,405	2.5	37,619
Administrative and General	1,034,002	5.0	957,634	5.5	76,368
Depreciation and Amortization	1,026,746	5.0	940,139	5.4	86,607
Other Interest and Deductions	20,404	0.1	21,226	0.1	(822)
Total Operating Expenses	\$ 18,400,988	89.5	\$ 16,129,911	93.3	\$ 2,271,077
OPERATING MARGINS - Before Fixed Charges	\$ 2,163,050	10.5	\$ 1,137,234	6.7	\$ 1,025,816
FIXED CHARGES					
Interest on Long-Term Debt	1,151,835	5.6	1,037,979	6.0	113,856
OPERATING MARGIN - After Fixed Charges	\$ 1,011,215	4.9	\$ 99,255	0.7	\$ 911,960
Other Capital Credits	2,134,396	10.4	2,006,274	11.6	128,122
NET OPERATING MARGIN	\$ 3,145,611	15.3	\$ 2,105,529	12.3	\$ 1,040,082
NONOPERATING MARGINS					
Interest Income	\$ 91,378	0.4	\$ 66,772	0.4	\$ 24,606
Nonoperating Income	83,788	0.4	695,169	4.0	(611,381)
	\$ 175,166	0.8	\$ 761,941	4.4	\$ (586,775)
NET MARGINS	\$ 3,320,777	16.1	\$ 2,867,470	16.7	\$ 453,307
OTHER COMPREHENSIVE INCOME (LOSS)					
Adjustment for Post-retirement Benefit Obligation	\$ (348,446)		\$ 293,479		
COMPREHENSIVE INCOME	\$ 2,972,331		\$ 3,160,949		
Post-retirement Benefit Obligation	348,446		(293,479)		
PATRONAGE CAPITAL - BEGINNING OF YEAR	10,749,123		7,901,285		
Offset Prior Year Losses with Current Margins			(19,632)		
PATRONAGE CAPITAL - END OF YEAR	\$ 14,069,900		\$ 10,749,123		

See accompanying notes to financial statements.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Exhibit C

STATEMENT OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2009 AND 2008

	September 30,	
	2009	2008
CASH FLOWS FROM OPERATING ACTIVITIES		
Net Margins	\$ 3,320,777	\$ 2,867,470
Adjustments to Reconcile Net Income to Net Cash Provided by Operating Activities		
Depreciation and Amortization	1,199,891	1,101,637
Post-retirement Benefits	140,346	140,346
Capital Credits - Non Cash	(2,082,084)	(1,923,896)
Deferred Charges	(10,199)	(20,344)
Deferred Credits	2	567
Fuel Costs Over Recovered	413,505	(30,898)
Accounts Receivable	(43,325)	(76,559)
Accounts Receivable/ Payable - Graham County Utilities	(522,466)	(843,891)
Inventories and Prepaid Expenses	24,441	(596,890)
Payables and Accrued Expenses	(177,611)	588,514
Net Cash Provided by Operating Activities	\$ 2,263,277	\$ 1,206,056
CASH FLOWS FROM INVESTING ACTIVITIES		
Additions to Utility Plant	\$ (2,325,830)	\$ (2,998,636)
Cost of Removal (in Excess of)/Less Than Salvage Value and Other Credits	(55,592)	20,427
Investments in Associated Organizations	(145,298)	(34,356)
Notes Receivable	41,472	35,421
Net Cash Used in Investing Activities	\$ (2,485,248)	\$ (2,977,144)
CASH FLOWS FROM FINANCING ACTIVITIES		
CFC Loan Proceeds	\$ 1,500,000	\$ 2,000,000
Payments on Long-Term Debt to CFC	(270,012)	(225,022)
Payments on Other Long-Term Debt	(18,663)	(17,280)
Payments on Behalf of Retirees	(96,012)	(95,634)
Memberships	1,533	302
Net Cash Provided by Financing Activities	\$ 1,116,846	\$ 1,662,366
INCREASE (DECREASE) IN CASH EQUIVALENTS	\$ 894,875	\$ (108,722)
CASH AND CASH EQUIVALENTS - BEGINNING OF YEAR	580,635	689,357
CASH AND CASH EQUIVALENTS - END OF YEAR	\$ 1,475,510	\$ 580,635
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION		
Cash Paid During the Year for:		
Interest on Long-Term Debt	\$ 1,161,339	\$ 1,048,603
Federal Income Tax	\$ 0	\$ 0

SUPPLEMENTAL DISCLOSURE OF NON CASH FLOW INFORMATION

The Cooperative adopted the recognition and disclosure provisions of SFAS No. 158 for the year ending September 30, 2007. During the years ended September 30, 2009 and 2008, application of Post-retirement Benefit Obligation resulted in an increase in accrued post-retirement benefit liability and equities by \$348,446 and a decrease in accrued post-retirement benefit liability and equities by \$293,479, respectively.

See accompanying notes to financial statements.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

1. Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations

Graham County Electric Cooperative, Inc. (the Cooperative) is a non-profit company organized to provide electric service at the retail level to primarily residential and commercial accounts in a designated service area. Power delivered at retail is purchased wholesale from Arizona Electric Power Cooperative, Inc. of which the Cooperative is a member/owner. Any revenues earned in excess of costs incurred are allocated to members of the Cooperative and are reflected as patronage capital equity in the balance sheet.

System of Accounts

The accounting records of the Cooperative are maintained in accordance with the Uniform System of Accounts as prescribed by the Federal Energy Regulatory Commission for Class A and B electric utilities modified for electric borrowers of the National Rural Utilities Cooperative Finance Corporation (CFC).

Electric Plant, Maintenance, and Depreciation

Electric plant is stated at the original cost of construction which includes the cost of contracted services, direct labor, materials, and overhead items. Contributions from others toward the construction of electric plant are credited to the applicable plant accounts.

When property which represents a retirement unit is replaced or removed, the estimated cost of such property is credited to electric plant and such cost, together with cost of removal less salvage, is charged to the accumulated provision for depreciation.

Maintenance and repairs, including the renewal of minor items of plant not comprising a retirement unit, are charged to the appropriate maintenance accounts, except that repairs of transportation and service equipment are charged to clearing accounts and redistributed to operating expense and other accounts.

Inventories

Materials and supplies inventories are valued at average unit cost.

Cash and Cash Equivalents

For purposes of the statement of cash flows, cash and cash equivalents are represented by Cash - General.

Electric Revenues

The Cooperative's operating revenues are under the jurisdiction of the Arizona Corporation Commission.

The Cooperative records electric revenues as billed to customers on a monthly basis. Revenue is not accrued for power delivered but not billed at the end of each month. The unbilled revenue was estimated to be \$528,631 and \$531,894 at September 30, 2009 and 2008, respectively.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

The Cooperative's tariffs for electric service include fuel adjustment clauses under which electric rates charged to consumers are adjusted to reflect changes in the cost of fuel included in purchased power. The power cost to be billed in subsequent periods is recognized as Under-Recovered Fuel Costs and power cost billed in advance is reflected as Over-Recovered Fuel Cost.

Group Concentration of Credit Risk

The Cooperative headquarters facilities are located in Pima, Arizona. The service area includes members located in Graham County, Arizona. The Cooperative records a receivable for electric revenues as billed on a monthly basis. The Cooperative requires a deposit from some consumers upon connection. The deposit is applied to any unpaid bills and fees in the event of default. The deposit accrues interest annually and is refunded after an established history of prompt payments. Deposits on hand totaled \$179,877 and \$174,787 at September 30, 2009 and 2008, respectively.

Graham County Electric Cooperative, Inc. is the guarantor of the mortgage notes executed by Graham County Utilities, Inc. (an affiliated company) to CFC in the amount of \$3,193,711 payable over 25 years with a maturity date of September 30, 2014, June 30, 2026, and September 30, 2031. At September 30, 2009, the principal balance owed on the mortgage note was \$1,532,970. Payments on the note are being made when due.

The Cooperative maintains its cash balances in various financial institutions in Safford, Arizona. The balance is insured at each location by the Federal Deposit Insurance Corporation. Deposits, at times, exceed insured amounts.

Patronage Capital Certificates

Patronage capital from associated organizations is recorded at the stated amount of the certificate.

Federal Income Tax Status

The Cooperative qualifies for exempt status under Internal Revenue Code section 501(c)(12) which requires that 85% or more of income consists of amounts collected from members.

Allowance for Uncollectible Accounts

The Cooperative uses the aging method to allow for uncollectible receivable. During the year, management makes an evaluation of past due accounts to determine collectability. The accounts deemed uncollectible are written off upon approval by the Board of Directors.

Use of Estimates in the Preparation of Financial Statements

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

2. Electric Plant

The major classes of electric plant are as follows:

	September, 30,	
	2009	2008
Intangible Plant	\$ 3,060	\$ 3,060
Transmission Plant	2,551,563	2,551,563
Distribution Plant	26,892,365	26,419,057
General Plant	6,051,067	3,483,747
Total Electric Plant in Service	\$ 35,498,055	\$ 32,457,427
Contruction Work in Progress	274,702	1,555,334
Total Electric Plant	\$ 35,772,757	\$ 34,012,761

Provision for depreciation of electric plant is computed using straight-line composite rates as follows:

Transmission Plant	2.75%
Distribution Plant	2.94%

Straight-line composite depreciation rates are applied to all general plant accounts, except the transportation equipment which is depreciated on an item by item basis. Depreciation rates are selected for the general plant account, based upon the estimated useful life of the asset and are as follows:

Buildings	2.0 - 2.5%
Transportation	10.0 - 20.0%
Office Equipment	5.0 - 20.0%
Laboratory and Tools	4.8%
Communication	5.0 - 10.0%

Depreciation and amortization for the years ended September 30, 2009 and 2008, was \$1,199,891 and \$1,101,637, respectively, of which \$1,026,746 and \$940,139 was charged to depreciation expense and \$173,145 and \$161,498 allocated to other accounts, respectively.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

3. Investments in Associated Organizations

Investments in associated organizations consisted of the following:

	September 30,	
	2009	2008
CFC		
Patronage Capital	\$ 335,312	\$ 247,905
Capital Term Certificates	601,041	493,202
Membership	1,000	1,000
	<u>\$ 937,353</u>	<u>\$ 742,107</u>
Arizona Electric Power Cooperative, Inc.		
Patronage Capital	\$ 5,317,891	\$ 3,289,621
Membership	5	5
	<u>\$ 5,317,896</u>	<u>\$ 3,289,626</u>
Graham County Utilities, Inc.		
Membership	\$ 5,000	\$ 5,000
Federated Rural Electric Insurance Corporation		
Common Stock	\$ 62,999	\$ 59,133
Other	\$ 100	\$ 100
	<u>\$ 6,323,348</u>	<u>\$ 4,095,966</u>

4. Notes Receivable

Notes receivable consisted of the following:

	September 30,	
	2009	2008
Due from Graham County Utilities, Inc.	<u>\$ 18,203</u>	<u>\$ 59,675</u>

During 1998, the Cooperative converted an account receivable from Graham County Utilities, Inc. into a note receivable with interest at 7.4%. The original term of the note was for five years. In 2001, the note was extended to 10 years with approval from the Arizona Corporation Commission.

5. Inventories

Inventories consisted of construction materials and supplies and totaled \$403,480 and \$430,526, at September 30, 2009 and 2008, respectively. In addition, the Cooperative has a spare substation transformer in inventory valued at \$571,810.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

6. Deferred Charges

Deferred charges consisted of the following:

	September 30,	
	2009	2008
NRECA Retirement Plan Past Service Cost	\$ 128,295	\$ 146,958
Rate Filing Expenses	23,891	25,734
Engineering Costs (Maintenance Review, Long Range Plan, Sectionalizing Study, and Work Plan)	64,197	27,637
Computer Software	1,586	2,946
Right of Way Lease	48,073	51,507
City of Safford Project	100,000	100,000
Other	676	1,737
	<u>\$ 366,718</u>	<u>\$ 356,519</u>

Deferred charges applicable to NRECA retirement plan past service pension costs represent charges incurred to recognize employees' prior service. This cost is to be paid and amortized over a 30-year period. The Cooperative is applying the provisions of FASB Statement No. 71 to defer these costs and to include them as cost of service in the next rate filing with the Arizona Corporation Commission.

7. Return of Capital

Under the provisions of the mortgage agreements, until the equities and margins equal or exceed 30% of the total assets of the Cooperative, the return to patrons of capital contributed by them is limited generally to 25% of the patronage capital or margins received by the Cooperative in the prior calendar year. The equities and margins of the Cooperative represent 36.0% (after adjustment for accumulated Other Comprehensive Income) or 39.6% (before adjustment for Accumulated Other Comprehensive Income) of the total assets at balance sheet date. No capital credit retirements were made during the years ended September 30, 2009 and 2008.

8. Patronage Capital

	September 30,	
	2009	2008
Assignable (9 months ended September 30)	\$ 2,369,561	\$ 1,763,738
Assigned	<u>12,449,898</u>	<u>9,734,944</u>
	\$ 14,819,459	\$ 11,498,682
Less: Retired	<u>749,559</u>	<u>749,559</u>
	<u>\$ 14,069,900</u>	<u>\$ 10,749,123</u>

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

9. Other Equities

	September 30,	
	2009	2008
Retired Capital Credits Gain	\$ 1,364	\$ 1,364

10. Long-Term Debt – CFC

Following is a summary of long-term debt due CFC maturing at various times from 2029 to 2038:

Note No.	Interest Rate	Maturity Date	Purpose	September 30,	
				2009	2008
9002 - 2&4	7.45%	05/24/29	Construction	\$ 427,875	\$ 437,336
9003	7.45%	07/20/30	Construction	425,186	433,530
9004	7.70%	07/20/30	Construction	437,644	445,953
9005	7.45%	07/20/30	Construction	425,186	433,530
9006	7.45%	01/20/32	Construction	435,258	443,800
9007	7.35%	09/04/32	Construction	579,661	591,187
9008 - 1&2	7.40%	09/04/32	Construction	751,169	763,513
9009 - 1&2	6.85%	09/03/33	Construction	1,788,393	1,817,617
9009 - 3	7.90%	09/03/33	Construction	1,826,178	1,851,575
9009 - 4&5	5.00%	06/30/33	Construction	1,749,318	1,779,011
9009 - 6	7.10%	06/30/33	Construction	358,422	364,060
9009 - 7	6.70%	06/30/33	Construction	314,182	319,434
90010 - 1	6.90%	12/31/38	Construction	956,674	966,564
90010 - 2	7.10%	09/30/34	Construction	2,832,630	2,872,658
90010 - 3	6.40%	06/30/38	Construction	958,693	970,023
90010 - 4	6.75%	03/31/37	Construction	487,152	493,102
90010 - 5&6	3.15%	12/31/38	Construction	1,968,077	1,996,415
90010 - 7	3.15%	09/30/38	Construction	989,560	
90010 - 8	4.75%	12/31/38	Construction	498,038	
				\$ 18,209,296	\$ 16,979,308
Less: Current Maturities				319,900	247,600
				\$ 17,889,396	\$ 16,731,708

Except for note number 90010 – 5, 6, & 7 which is a variable rate note all other notes have a fixed interest rate.

The Cooperative has unadvanced loan funds available of \$1,813,368.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

As of September 30, 2009, annual maturities of long-term debt due CFC for the next five years are as follows:

2009	\$ 319,900
2010	340,300
2011	361,100
2012	385,400
2013	410,300

Substantially all assets are pledged as security for the long-term debt due CFC.

11. Other Long-Term Debt

The Cooperative has elected to finance the cost of NRECA Retirement and Security Plan prior service benefits. The total cost, \$283,080 (including a 1997 tiered benefit buy-back of \$206,520), is to be paid over 30 years in annual payments including interest at the rate of eight percent. The balance outstanding at September 30, 2009 and 2008, is \$128,295 and \$146,958, respectively. Annual maturities due NRECA for the next five years are as follows:

2009	\$ 20,156
2010	21,768
2011	23,510
2012	25,391
2013	3,294

12. Short-Term Borrowing

The Cooperative had a \$1,100,000 line of credit for short-term financing with CFC at an interest rate of one percent above the prime interest rate. The Cooperative had not borrowed any funds under the agreement at September 30, 2009 or 2008.

The Cooperative has a \$50,000 business line of credit with Bank One, N.A. No funds had been borrowed under this agreement at September 30, 2009 and 2008.

13. Deferred Credits

Deferred credits consisted of the following:

	September 30,	
	2009	2008
Unclaimed Memberships and Deposit Refunds	\$ 7,783	\$ 7,781

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

14. Litigation

There is no litigation pending against the Cooperative at September 30, 2009, that would have a material effect on the financial statements.

15. Pension Benefits and Benefits to Retirees

Pension Benefits

Substantially all employees of the Cooperative participate in the National Rural Electric Cooperative Association (NRECA) Retirement & Security Program (a defined benefit plan) and the 401(K) Savings' Plan (a defined contribution plan). The plans are qualified and tax exempt under the Internal Revenue Code. In these multi-employer plans, which are available to all NRECA member cooperatives, the accumulated benefits and plan assets are not determined or allocated separately by individual employer.

The Cooperative makes monthly contributions to the retirement and security plan equal to the amounts accrued for pension expense. The pension cost for the Cooperative for the plan for the years ended September 30, 2009 and 2008, was \$512,540 and \$412,999, respectively.

The pension cost for the 401(K) Savings Plan was \$102,701 and \$92,423 for the years ended September 30, 2009 and 2008, respectively.

Benefits to Retirees

The Cooperative provides post-retirement medical and life insurance benefits for eligible employees and their dependents through a plan with NRECA. For purposes of this statement, the written plan in effect is the substantive plan, and is considered a defined benefit plan.

Summary of the Plan

The retiree medical plan is a Preferred Provider Organization. Eligibility for retirement benefits are currently retired, surviving spouse, or an active employee age 55 with 10 years of service by July 1, 2001. Active directors and spouses of future retirees will not become eligible for postretirement benefits.

The retiree contributes to the benefit plan based on the following schedule of years of service:

<u>Service</u>	<u>Contributions</u>
0-9	100.00%
10-14	66.67%
15-19	33.33%
20+	0.00%

The Cooperative contributes the same amount for the retiree's dependent or surviving spouse as for the retiree.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

Net periodic post-retirement medical care costs for years ending September 30, 2009 and 2008, consisted of the following components:

	September 30,	
	2009	2008
I) Net Post-retirement Benefit Cost		
Interest Cost	\$ 70,493	\$ 70,493
Amortization of Transition Obligation	18,868	18,868
Amortization of Actuarial Loss	50,985	50,985
Total Expense	<u>\$ 140,346</u>	<u>\$ 140,346</u>
II) Accumulated Post-retirement Benefit Obligation (APBO) Reconciliation:		
APBO Balance at Beginning of Year	\$ 1,193,944	\$ 1,442,711
Total Expense	140,346	140,346
Amount Recognized as Accumulated Other Comprehensive Loss	348,446	(293,479)
Benefits Paid	(96,012)	(95,634)
Net Post-retirement Benefit Liability at Year End	<u>\$ 1,586,724</u>	<u>\$ 1,193,944</u>
III) Reconciliation of Funded Status		
APBO	\$ 304,268	\$ 259,934
Unrecognized Transition Obligation	113,196	132,064
Unrecognized Actuarial Loss	1,169,260	801,946
Accrued Post-retirement Benefit Cost	<u>\$ 1,586,724</u>	<u>\$ 1,193,944</u>
IV) Amounts Recognized as Accumulated Other Comprehensive Income		
Unamortized Actuarial Loss	\$ 113,196	\$ 132,064
Unrecognized Transition Obligation	1,169,260	801,946
Other Comprehensive Loss	<u>\$ 1,282,456</u>	<u>\$ 934,010</u>

The information is based on the most recent USI Consulting Group valuation calculated as of October 1, 2007.

The Cooperative funds the retiree health care premiums on a cash basis and in 2009 and 2008 paid \$96,012 and \$95,634, respectively, for retirees' health care coverage.

The weighted-average discount rate used to develop the accumulated post-retirement benefit obligation was 5.35%. The assumed health care cost trend rate is eight percent for 2009. If health care cost trend rate assumptions were increased by one percent, the accumulated post-retirement benefit obligation would be increased by approximately \$161,185. The effect of this change on the sum of the service cost and interest cost components for the first year would be an increase of approximately \$7,463.

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

The estimated actuarial loss for the post-retirement medical benefit plan that will be amortized from accumulated other comprehensive income into net post-retirement benefit cost over the next fiscal year is a credit of \$101,641. The amount of the transition obligation that will be amortized from accumulated other comprehensive income into net post-retirement benefit cost over the next fiscal year is an expense of \$18,868.

Estimated future benefit payments for the next three years are as follows:

2010	\$ 118,149
2011	119,063
2012	119,207
2013	112,804
2014	114,690
2015 – Thereafter	585,425

16. Related Parties

The Cooperative is represented on the Board of Directors of Arizona Electric Power Cooperative, Inc. (AEP CO) and purchases all of its electric power from AEP CO. Margins earned by AEP CO have been allocated to the Cooperative, and are reflected under investment in associated organizations on the balance sheet.

In addition, the Cooperative is related by having almost identical Boards of Directors with Graham County Utilities, Inc. (GCU). The Cooperative is a Class "A" Member of GCU, having paid a membership fee of \$5,000.

The Cooperative provides administrative and general, management, operations, consumer accounting, and construction services to GCU under an operating and management agreement signed by both parties on June 20, 1989. Services are billed and accounted for under the terms of the agreement.

Intercompany balances between the two cooperatives are summarized as follows:

	September 30,	
	2009	2008
Graham County Electric Cooperative, Inc.		
Accounts Receivable	\$ 1,340,164	\$ 817,698
Note Receivable	18,203	59,675
Net Due from Affiliated Cooperative	<u>\$ 1,358,367</u>	<u>\$ 877,373</u>
Graham County Utilities, Inc.		
Accounts Payable	\$ (1,340,164)	\$ (817,698)
Note Payable	(18,203)	(59,675)
Net Due to Affiliated Cooperative	<u>\$ (1,358,367)</u>	<u>\$ (877,373)</u>

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

NOTES TO FINANCIAL STATEMENTS

17. Commitments and Contingencies

As previously mentioned in Note 1, the Cooperative is the guarantor of Graham County Utilities, Inc. mortgage note payable to CFC.

The Cooperative has executed a contract to purchase all of its electric power requirements from Arizona Electric Power Cooperative, Inc. The contract is effective through December 31, 2050.

The Cooperative with other Class "A" members of AEPCO has guaranteed to provide its share of power to Salt River Project in the event that AEPCO cannot perform under its firm power agreement.

18. Subsequent Events

The Cooperative has evaluated subsequent events through November 23, 2009, the date the financial statements were available to be issued.

[illegible]

BOLINGER, SEGARS, GILBERT & MOSS, L.L.P.

CERTIFIED PUBLIC ACCOUNTANTS

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**INDEPENDENT AUDITORS' REPORT ON
ACCOMPANYING INFORMATION**

Our audits of the basic financial statements presented in the preceding section of this report were made for the purpose of forming an opinion on such financial statements taken as a whole. The accompanying information shown on pages 17 through 20 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Bolinger, Segars, Gilbert & Moss L.L.P.

Certified Public Accountants

November 23, 2009

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Schedule 1

ELECTRIC PLANT
FOR THE YEAR ENDED SEPTEMBER 30, 2009

	Balance 10/1/2008	Additions and Transfers	Retirements	Balance 9/30/2009
Intangible Plant	\$ 3,060	\$	\$	\$ 3,060
Transmission Plant				
Land and Land Rights	\$ 7,253	\$	\$	\$ 7,253
Station Equipment	144,717			144,717
Poles and Fixtures	1,643,066			1,643,066
Overhead Conductors and Devices	756,527			756,527
Total	\$ 2,551,563	\$ 0	\$ 0	\$ 2,551,563
Distribution Plant				
Land and Land Rights	\$ 47,810	\$ 25,015	\$	\$ 72,825
Station Equipment	5,634,888			5,634,888
Poles, Towers, and Fixtures	6,894,338	281,124	61,736	6,913,726
Overhead Conductors and Devices	3,628,711	140,717	21,346	3,748,082
Underground Conductors	542,955			542,955
Underground Conductors and Devices	729,564	11,560		741,124
Line Transformers	6,505,261	154,789	95,843	6,564,207
Services	1,286,091	42,325	1,172	1,327,244
Meters	1,142,140	48,023	55,207	1,134,956
Installations on Consumers' Premises	207,297	5,061		212,358
Total	\$ 26,419,055	\$ 708,614	\$ 235,304	\$ 26,892,365
General Plant				
Land and Land Rights	\$ 57,594	\$ 135,197	\$	\$ 192,791
Structures and Improvements	324,366	2,413,804	113,869	2,624,301
Office Furniture and Equipment	49,159	44,493		93,652
Office Furniture and Equipment - Computer	216,168	27,715		243,883
Transportation	2,064,243	179,829	216,661	2,027,411
Store Equipment	2,587			2,587
Tools, Shop, and Garage Equipment	215,360	14,986		230,346
Laboratory Equipment	82,273	2,421		84,694
Power Operated Equipment	183,406			183,406
Communications Equipment	285,441	40,200		325,641
Miscellaneous Equipment	3,152	39,203		42,355
Total	\$ 3,483,749	\$ 2,897,848	\$ 330,530	\$ 6,051,067
Total Classified Plant in Service	\$ 32,457,427	\$ 3,606,462	\$ 565,834	\$ 35,498,055
Construction Work in Progress	1,555,334	(1,280,632)		274,702
	\$ 34,012,761	\$ 2,325,830	\$ 565,834	\$ 35,772,757

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC

Schedule 2

ACCUMULATED PROVISION FOR DEPRECIATION AND AMORTIZATION
FOR THE YEAR ENDED SEPTEMBER 30, 2009

	<u>Balance 10/1/2008</u>	<u>Depreciation Accruals</u>	<u>Retirements</u>	<u>Balance 9/30/2009</u>
Transmission Plant	\$ <u>803,685</u>	\$ <u>69,969</u>	\$ <u> </u>	\$ <u>873,654</u>
Distribution Plant	\$ <u>8,511,102</u>	\$ <u>779,701</u>	\$ <u>296,848</u>	\$ <u>8,993,955</u>
General Plant	\$ <u>2,616,135</u>	\$ <u>350,221</u>	\$ <u>323,959</u>	\$ <u>2,642,397</u>
Total Classified Electric Plant in Service	\$ <u>11,930,922</u>	\$ <u>1,199,891</u>	\$ <u>620,807</u>	\$ <u>12,510,006</u>
Retirement Work in Progress	<u>(24,802)</u>	<u> </u>	<u>619</u>	<u>(25,421)</u>
Total Utility Plant	\$ <u><u>11,906,120</u></u>	\$ <u><u>1,199,891</u></u>	\$ <u><u>621,426</u></u>	\$ <u><u>12,484,585</u></u>

(1)

(2)

- (1) Charged to Depreciation and
Amortization Expense
Charged to Clearing and
Other Accounts

\$ 1,026,746
173,145
\$ 1,199,891

- (2) Cost of Units Retired
Less: Salvage and Other Credits in Excess of Cost of Removal

\$ 565,834
55,592
\$ 621,426

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Schedule 3

ADMINISTRATIVE AND GENERAL EXPENSES
SEPTEMBER 30, 2009 AND 2008

	September 30,		Increase (Decrease)
	2009	2008	
Administrative and General Salaries	\$ 286,477	\$ 267,289	\$ 19,188
Office Supplies and Expense	138,830	152,321	(13,491)
Outside Services Employed	56,238	77,907	(21,669)
Property Insurance	9,360	9,705	(345)
Injuries and Damages	49,099	50,911	(1,812)
Employee Pension and Benefits	138,015	125,996	12,019
Regulatory Commission Expense	48,017	27,151	20,866
Miscellaneous General Expense	152,841	145,832	7,009
Rents	8,448	11,058	(2,610)
Maintenance of General Plant	146,677	89,464	57,213
Total	\$ <u>1,034,002</u>	\$ <u>957,634</u>	\$ <u>76,368</u>

GRAHAM COUNTY ELECTRIC COOPERATIVE, INC.

Schedule 4

FIVE YEAR COMPARATIVE STATEMENT OF REVENUES AND EXPENSES

	Years Ended September 30,				
	2009	2008	2007	2006	2005
OPERATING REVENUES	\$ 20,564,038	\$ 17,267,145	\$ 16,287,421	\$ 13,962,428	\$ 11,364,581
OPERATING EXPENSES					
Purchased Power	\$ 14,104,478	\$ 11,736,801	\$ 11,330,034	\$ 9,359,803	\$ 7,123,301
Operation	606,488	591,612	581,729	504,795	478,522
Maintenance	1,145,846	1,457,094	1,495,928	1,273,325	949,046
Customer Accounts	463,024	425,405	399,683	357,972	307,294
Administrative and General	1,034,002	957,634	942,982	813,419	830,542
Depreciation and Amortization	1,026,746	940,139	899,353	853,484	728,601
Other Interest and Deductions	20,404	21,226	22,533	21,932	20,864
Total Operating Expenses	\$ 18,400,988	\$ 16,129,911	\$ 15,672,242	\$ 13,184,730	\$ 10,438,170
OPERATING MARGINS - Before Fixed Charges	\$ 2,163,050	\$ 1,137,234	\$ 615,179	\$ 777,698	\$ 926,411
Interest - Long-Term Debt	1,151,835	1,037,979	1,004,064	989,919	901,884
OPERATING MARGINS (LOSS) - After Fixed Charges	\$ 1,011,215	\$ 99,255	\$ (388,885)	\$ (212,221)	\$ 24,527
Other Capital Credits	2,134,396	2,006,274	118,818	117,853	81,524
NET OPERATING MARGINS (LOSS)	\$ 3,145,611	\$ 2,105,529	\$ (270,067)	\$ (94,368)	\$ 106,051
NONOPERATING MARGINS	175,166	761,941	103,996	95,430	65,915
NET MARGINS (LOSS)	\$ 3,320,777	\$ 2,867,470	\$ (166,071)	\$ 1,062	\$ 171,966

10 YEAR FINANCIAL FORECAST

** Last Year **

** Future Years **

ITEM	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ratios with Additional Revenue											
1. Equity	37.1%	35.1%	33.8%	33.6%	35.4%	37.3%	39.4%	40.4%	41.5%	42.6%	43.8%
2. Debt Service Coverage (DSC)	3.21	1.98	1.64	1.58	1.81	1.85	1.93	1.57	1.54	1.56	1.54
3. Times Interest Earned Ratio (TIER)	3.14	1.62	1.26	1.24	1.57	1.64	1.73	1.27	1.25	1.29	1.29
Revenue Comparison											
4. Average Revenue per Mwh	\$137.92	\$138.77	\$138.13	\$138.00	\$143.34	\$143.22	\$143.12	\$143.96	\$143.92	\$143.85	\$143.80
5. Increase in Average Revenue (Annual)	0.6%	0.6%	-0.5%	-0.1%	3.9%	-0.1%	-0.1%	0.6%	\$324.09	\$323.62	\$324.02
6. Total Utility Plant per Mwh Sold	\$237.69	\$271.77	\$285.00	\$287.00	\$295.05	\$293.90	\$291.71	\$322.60	\$324.09	\$323.62	\$324.02
Ratios to Total Utility Plant											
7. Net General Funds	3.7%	6.0%	6.8%	6.7%	6.9%	7.4%	8.9%	8.8%	8.6%	8.4%	8.2%
8. Depreciation & Amortization	35.1%	33.2%	32.9%	33.2%	34.4%	35.6%	37.0%	38.5%	39.9%	41.3%	42.8%
Ratios to Consumers											
9. Operations & Maintenance	\$210.56	\$217.80	\$220.40	\$219.95	\$220.30	\$221.62	\$223.71	\$244.46	\$249.21	\$253.11	\$257.67
10. Administrative & General	\$114.28	\$118.20	\$119.61	\$119.37	\$119.56	\$120.28	\$121.41	\$132.67	\$135.25	\$137.37	\$139.84
Rate Information											
11. Plant Revenue Ratio	5.53	6.33	6.75	6.78	6.27	6.25	6.17	6.81	6.85	6.84	6.85
12. Rate of Return on Rate Base	5.9%	5.9%	5.0%	5.1%	6.8%	7.0%	7.3%	4.8%	4.6%	4.6%	4.4%
13. Rate Base = 104% Net Utility Plant / 1000	\$27,567	\$29,655	\$29,655	\$30,813	\$30,981	\$31,111	\$30,898	\$30,663	\$30,406	\$30,128	\$29,828
14. Required Increase Over Present Rates	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Modified Ratios											
15. Modified Debt Service Coverage	1.91	1.61	1.55	1.55	1.78	1.82	1.91	1.55	1.53	1.54	1.53
16. Modified Times Interest Earned Ratio	1.52	1.16	1.16	1.14	1.47	1.53	1.63	1.16	1.14	1.18	1.18
17. Operating Times Interest Earned Ratio	1.35	1.07	1.06	1.06	1.40	1.46	1.56	1.09	1.06	1.09	1.08

Pro Forma Balance Sheet - RUS Form 325 B

ITEM	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Assets and Other Debits											
A. Total Utility Plant	\$36,185,927	\$39,736,996	\$42,553,065	\$44,376,884	\$45,428,953	\$46,473,522	\$47,209,347	\$47,945,172	\$48,680,997	\$49,416,822	\$50,152,647
B. Accum. Prov. for Depr.	12,701,474	13,230,005	14,038,512	14,748,816	15,638,998	16,558,846	17,499,591	18,461,234	19,443,774	20,447,212	21,471,547
C. Net Utility Plant	\$23,484,453	\$26,506,991	\$28,514,553	\$29,628,068	\$29,789,955	\$29,914,676	\$29,709,756	\$29,483,938	\$29,237,223	\$28,969,610	\$28,681,100
D. Net General Funds	1,329,728	2,384,220	2,875,593	2,985,022	3,147,093	3,432,675	4,187,887	4,207,171	4,171,432	4,152,922	4,103,621
E. General Funds Excludable	964,646	973,998	1,006,447	1,066,315	1,100,187	1,107,214	1,099,519	1,091,683	1,083,325	1,074,398	1,064,875
F. Other Assets and Debits	9,066,426	9,184,002	9,252,191	9,311,581	9,365,383	9,408,530	9,444,513	9,476,007	9,503,916	9,536,906	9,567,256
G. Total Assets & Other Debits	\$34,845,253	\$39,049,211	\$41,648,784	\$42,990,986	\$43,402,618	\$43,863,095	\$44,441,675	\$44,258,799	\$43,995,896	\$43,733,836	\$43,416,852
2. Liabilities and Other Credits											
A. Total Margins & Equities	\$12,944,251	\$13,698,431	\$14,083,800	\$14,458,585	\$15,372,230	\$16,369,481	\$17,489,715	\$17,885,628	\$18,241,664	\$18,640,965	\$19,030,712
B. Long Term Debt - RUS											
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0	0
Total Long Term Debt - RUS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
C. Long Term Debt - CFC	19,518,215	21,709,235	23,923,439	24,890,856	24,388,843	23,852,069	23,310,415	22,731,626	22,112,687	21,451,326	20,744,595
D. Other Liabilities & Credits	2,382,787	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545	3,641,545
E. Unamortized Debt Discount	0	0	0	0	0	0	0	0	0	0	0
F. Total Liabilities & Credits	\$34,845,253	\$39,049,211	\$41,648,784	\$42,990,986	\$43,402,618	\$43,863,095	\$44,441,675	\$44,258,799	\$43,995,896	\$43,733,836	\$43,416,852

ITEM	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Accrual Basis										
A1. Addit. Rev. for TIER & DSC Goals										
A2. Oper. Rev. & Pat. Cap/Present Rates	\$ 20,290,860	\$ 20,624,713	\$ 21,337,777	\$ 22,070,499	\$ 22,647,891	\$ 23,162,646	\$ 21,395,312	\$ 21,617,931	\$ 21,965,843	\$ 22,258,070
B. Cost of Purchased Power	14,018,023	14,315,937	14,793,244	14,826,532	15,210,422	15,505,714	14,356,263	14,513,834	14,744,077	14,935,425
C. Oper. Revenue less Cost of Power	\$ 6,272,837	\$ 6,308,776	\$ 6,544,533	\$ 7,243,967	\$ 7,437,469	\$ 7,656,932	\$ 7,039,049	\$ 7,104,097	\$ 7,221,766	\$ 7,322,645
D. Operations & Maintenance Expense	1,952,134	2,010,699	2,071,019	2,133,150	2,197,144	2,263,058	2,330,950	2,400,879	2,472,905	2,547,093
E. Consumer Acc. & Sales Expense	488,674	503,334	518,434	533,988	550,007	566,507	583,503	601,008	619,038	637,609
F. Adm. & Gen. & Other Ded. Expense	1,059,449	1,091,232	1,123,969	1,157,688	1,192,419	1,228,191	1,265,037	1,302,988	1,342,078	1,382,340
G. Depreciation & Amortization Expense	1,128,531	1,208,507	1,260,304	1,290,182	1,319,848	1,340,745	1,361,643	1,382,540	1,403,438	1,424,335
H. Tax Expense	0	0	0	0	0	0	0	0	0	0
I. Interest Expense	1,219,348	1,471,184	1,574,127	1,602,887	1,569,749	1,528,400	1,493,336	1,452,603	1,377,766	1,334,906
J. Amortized Gain on Prepayment	0	0	0	0	0	0	0	0	0	0
K. Total Cost of Electric Service	\$ 19,866,159	\$ 20,600,893	\$ 21,341,097	\$ 21,544,427	\$ 22,039,589	\$ 22,432,615	\$ 21,390,732	\$ 21,653,852	\$ 21,959,302	\$ 22,261,708
L. Patronage Capital & Oper. Margins	424,701	23,820	-3,320	526,072	608,302	730,031	4,580	-35,921	6,541	-3,638
M. Nonoperating Margins	210,388	214,378	218,447	222,598	226,832	231,150	235,555	240,048	244,630	249,305
N. G. & T. and Other Capital Credits	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951
O. CFC Capital Credits	109,091	136,971	149,254	154,363	151,293	148,012	144,516	140,422	136,413	132,129
P. Total Accrual Margins	\$ 754,180	\$ 385,369	\$ 374,785	\$ 913,645	\$ 997,251	\$ 1,120,234	\$ 395,913	\$ 356,036	\$ 399,301	\$ 389,747
2. Cash Basis										
A. Cash from Operations before D. S.	\$ 2,982,968	\$ 2,917,889	\$ 3,049,558	\$ 3,641,739	\$ 3,724,731	\$ 3,830,326	\$ 3,095,114	\$ 3,039,270	\$ 3,032,375	\$ 3,004,908
B. Total Debt Service	1,565,993	1,864,929	2,027,113	2,104,900	2,106,523	2,070,054	2,072,125	2,071,542	2,039,127	2,041,637
C. Cash Margins after Debt Service	\$ 1,416,975	\$ 1,052,960	\$ 1,022,445	\$ 1,536,839	\$ 1,618,208	\$ 1,760,272	\$ 1,022,989	\$ 967,728	\$ 993,248	\$ 963,271
General Funds Summary - RUS Form 325 D										
ITEM	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Summary of General Funds										
A. Net General Funds Beginning of Year	\$ 1,329,728	\$ 2,384,220	\$ 2,875,593	\$ 2,985,022	\$ 3,147,093	\$ 3,432,675	\$ 4,187,887	\$ 4,207,171	\$ 4,171,432	\$ 4,152,922
B. Cash Margins After Debt Service	1,416,975	1,052,960	1,022,445	1,536,839	1,618,208	1,760,272	1,022,989	967,728	993,248	963,271
C. Other Proceeds	0	0	0	0	0	0	0	0	0	0
D. Sale of Excludable Items	0	0	0	0	0	0	0	0	0	0
E. Reimbursement of General Funds	0	0	0	0	0	0	0	0	0	0
F. Refund of G. & T. Capital Credits	0	0	0	0	0	0	0	0	0	0
G. Refund of CFC Capital Credits	1,515	78,982	100,268	111,173	118,970	123,070	124,284	124,000	115,140	113,730
H. Refund of Capital Term Certificates	5,648	5,515	4,176	6,411	7,177	7,695	7,836	8,358	8,927	9,523
2. Total General Funds Available	\$ 2,753,866	\$ 3,521,677	\$ 4,002,482	\$ 4,639,445	\$ 4,891,448	\$ 5,323,712	\$ 5,342,996	\$ 5,307,257	\$ 5,288,747	\$ 5,239,446
3. Proposed Uses of General Funds										
A. Purchase of Excludable Items	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
B. Capital Credit Retirements	0	0	0	0	0	0	0	0	0	0
C. General Funds Invested in Plant	354,646	608,120	953,416	1,452,069	1,444,569	1,135,825	1,135,825	1,135,825	1,135,825	1,135,825
D. Purchase of Capital Term Certif.	15,000	37,964	64,044	40,283	14,204	0	0	0	0	0
E. Other Uses of General Funds	0	0	0	0	0	0	0	0	0	0
4. Total Proposed Uses - General Funds	\$ 369,646	\$ 646,084	\$ 1,017,460	\$ 1,492,352	\$ 1,458,773	\$ 1,135,825	\$ 1,135,825	\$ 1,135,825	\$ 1,135,825	\$ 1,135,825
5. Net General Funds - End of Year	\$ 2,384,220	\$ 2,875,593	\$ 2,985,022	\$ 3,147,093	\$ 3,432,675	\$ 4,187,887	\$ 4,207,171	\$ 4,171,432	\$ 4,152,922	\$ 4,103,621

** Previous Years **

** Future Years **

ITEM	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Number of Consumers													
A. Residential	7,233	7,593	7,598	7,522	7,672	7,938	8,179	8,386	8,567	8,165	8,270	8,393	8,496
B. Residential - Seasonal	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Irrigation	648	595	576	598	599	600	600	600	600	578	578	578	578
D. Small Commercial	765	791	808	825	834	859	886	909	930	774	768	781	793
E. Large Commercial	15	16	16	15	15	16	15	16	16	15	15	15	15
F. Public Street Lights	3	3	3	3	3	3	3	3	3	3	3	3	3
G. Public Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Other 1	0	0	0	0	0	0	0	0	0	0	0	0	0
I. Other 2	0	0	0	0	0	0	0	0	0	0	0	0	0
J. Mercury Vapor Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
K. Total Consumers	8,664	8,998	9,001	8,963	9,123	9,416	9,683	9,914	10,116	9,535	9,634	9,770	9,885
2. Average Monthly Kwh Usage per Consumer													
A. Residential	830	797	809	785	789	795	800	804	807	799	802	804	806
B. Residential - Seasonal	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Irrigation	1,825	1,682	2,445	1,729	1,728	1,725	1,725	1,725	1,727	1,736	1,737	1,737	1,737
D. Small Commercial	3,257	3,076	2,954	3,125	3,160	3,185	3,197	3,210	3,221	3,262	3,277	3,291	3,300
E. Large Commercial	169,514	162,304	170,026	176,053	179,486	173,474	159,680	153,606	157,035	153,617	156,014	158,452	160,214
F. Public Street Lights	3,575	5,623	7,086	7,086	7,086	7,086	7,086	7,086	7,086	7,086	7,086	7,086	7,086
G. Public Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Other 1	0	0	0	0	0	0	0	0	0	0	0	0	0
I. Other 2	0	0	0	0	0	0	0	0	0	0	0	0	0
J. Mercury Vapor Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
3. Annual Mwh Sales													
A. Residential	72,076	72,636	73,792	70,913	72,690	75,801	78,554	80,935	83,031	78,366	79,608	81,027	82,223
B. Residential - Seasonal	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Irrigation	14,192	12,011	16,900	12,407	12,421	12,424	12,425	12,425	12,439	12,046	12,050	12,050	12,050
D. Small Commercial	29,904	29,197	28,645	30,944	31,630	32,833	33,990	35,016	35,956	30,300	30,209	30,844	31,411
E. Large Commercial	30,512	31,162	32,645	31,689	32,307	33,307	28,742	29,492	30,150	27,651	28,082	28,521	28,838
F. Public Street Lights	128	202	255	255	255	255	255	255	255	255	255	255	255
G. Public Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0
H. Other 1	0	0	0	0	0	0	0	0	0	0	0	0	0
I. Other 2	0	0	0	0	0	0	0	0	0	0	0	0	0
J. Mercury Vapor Lights	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Annual Power Requirements													
A. Total Mwh Sold	146,815	145,210	152,238	146,210	149,305	154,620	153,968	158,125	161,833	148,619	150,206	152,699	154,780
A1. Total Mwh Sold - No Line	0	0	0	0	0	0	0	0	0	0	0	0	0
B. System Own Mwh Use	181	202	235	186	189	194	193	197	201	188	190	192	194
C. System Loss Percentage (%)	8.55%	7.50%	7.58%	8.51%	8.52%	8.32%	8.91%	8.81%	8.45%	9.19%	9.22%	9.15%	9.10%
D. Total Mwh Requirements	160,745	157,200	164,985	160,011	163,411	168,860	169,240	173,622	176,992	163,872	165,670	168,298	170,483

** Previous Years **

** Future Years **

Estimated Revenue

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

1. Residential

A. Total Annual Mwh Sold	72,076	72,636	73,792	70,913	72,690	75,801	78,554	80,935	83,031	78,366	79,608	81,027	82,223
B. Average Rev. per Mwh Sold	85.28	101.59	109.89	109.89	109.89	109.89	112.09	112.09	112.09	112.09	112.09	112.09	112.09
C. Monthly Charge / Consumer	9.00	9.00	9.00	9.00	9.00	9.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
D. Average Number of Consumers	7,233	7,593	7,598	7,522	7,672	7,938	8,179	8,386	8,567	8,165	8,270	8,393	8,496
E. Rev. less FlowThru Adj.	6,927,906	8,199,518	8,929,804	8,605,255	8,816,731	9,187,304	9,983,198	10,279,892	10,540,874	9,960,066	10,114,359	10,291,117	10,440,069

2. Residential - Seasonal

A. Total Annual Mwh Sold	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Average Rev. per Mwh Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Rev. less FlowThru Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0

3. Irrigation

A. Total Annual Mwh Sold	14,192	12,011	16,900	12,407	12,421	12,424	12,425	12,425	12,439	12,046	12,050	12,050	12,050
B. Average Rev. per Mwh Sold	87.17	100.29	113.95	113.95	113.95	113.95	116.15	116.15	116.15	116.15	116.15	116.15	116.15
C. Monthly Charge / Consumer	23.00	23.00	23.00	23.00	23.00	23.00	28.00	28.00	28.00	28.00	28.00	28.00	28.00
D. Average Number of Consumers	648	595	576	598	599	600	600	600	600	578	578	578	578
E. Rev. less FlowThru Adj.	1,416,102	1,368,923	2,084,873	1,578,967	1,580,847	1,581,406	1,644,886	1,644,886	1,646,517	1,593,454	1,594,016	1,594,016	1,594,016

4. Small Commercial

A. Total Annual Mwh Sold	29,904	29,197	28,645	30,944	31,630	32,833	33,990	35,016	35,956	30,300	30,209	30,844	31,411
B. Average Rev. per Mwh Sold	85.36	101.28	108.95	108.95	108.95	108.95	111.15	111.15	111.15	111.15	111.15	111.15	111.15
C. Monthly Charge / Consumer	15.00	15.00	15.00	15.00	15.00	15.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
D. Average Number of Consumers	765	791	808	825	834	859	886	909	930	774	768	781	793
E. Rev. less FlowThru Adj.	2,690,589	3,099,651	3,266,461	3,519,940	3,596,291	3,731,855	3,980,122	4,099,422	4,208,673	3,544,371	3,532,981	3,606,530	3,672,280

5. Large Commercial

A. Total Annual Mwh Sold	30,512	31,162	32,645	31,689	32,307	33,307	28,742	29,492	30,150	27,651	28,082	28,521	28,838
B. Average Rev. per Mwh Sold	78.16	92.14	97.58	97.58	97.58	97.58	99.78	99.78	99.78	99.78	99.78	99.78	99.78
C. Monthly Charge / Consumer	50.00	50.00	50.00	50.00	50.00	50.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
D. Average Number of Consumers	15	16	16	15	15	16	15	16	16	15	15	15	15
E. Rev. less FlowThru Adj.	2,393,867	2,881,149	3,195,149	3,101,317	3,161,613	3,259,742	2,878,761	2,954,306	3,019,998	2,769,864	2,812,912	2,856,706	2,888,353

6. Public Street Lights

A. Total Annual Mwh Sold	128	202	255	255	255	255	255	255	255	255	255	255	255
B. Average Rev. per Mwh Sold	80.90	58.16	49.03	49.03	49.03	49.03	51.23	51.23	51.23	51.23	51.23	51.23	51.23
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	3	3	3	3	3	3	3	3	3	3	3	3	3
E. Rev. less FlowThru Adj.	10,413	11,774	12,510	12,510	12,510	12,510	13,071	13,071	13,071	13,071	13,071	13,071	13,071

** Previous Years **

** Future Years **

Estimated Revenue	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
7. Public Buildings													
A. Total Annual Mwh Sold	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Average Rev. per Mwh Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Rev. less FlowThru Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0
8. Other 1													
A. Total Annual Mwh Sold	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Average Rev. per Mwh Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Rev. less FlowThru Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Other 2													
A. Total Annual Mwh Sold	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Average Rev. per Mwh Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Rev. less FlowThru Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Mercury Vapor Lights													
A. Total Annual Mwh Sold	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Average Revenue per Mwh Sold	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Monthly Charge / Consumer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D. Average Number of Consumers	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Rev. less FlowThru Adj.	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Flow Through Adjustments													
A. Mwh Sold Subject to Adj. - 1	146,815	145,210	152,238	146,210	149,305	154,620	153,968	158,125	161,833	148,619	150,206	152,699	154,780
B. Flow Through Adj. - 1 per Mwh	16.44	13.73	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46	19.46
C. Revenue from Adjustment - 1	2,414,381	1,995,151	2,962,900	2,845,575	2,905,808	3,009,262	2,996,566	3,077,470	3,149,636	2,892,454	2,923,354	2,971,870	3,012,363
D. Mwh Sold Subject to Adj. - 2	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Flow Through Adj. - 2 per Mwh	0	0	0	0	0	0	0	0	0	0	0	0	0
F. Revenue from Adjustment - 2	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Total Rev. from Adjust.	2,414,381	1,995,151	2,962,900	2,845,575	2,905,808	3,009,262	2,996,566	3,077,470	3,149,636	2,892,454	2,923,354	2,971,870	3,012,363
12. Rev. - Electric Energy													
	15,853,258	17,556,166	20,451,697	19,663,564	20,073,800	20,782,079	21,496,604	22,069,047	22,578,769	20,773,280	20,990,693	21,333,310	21,620,152
13. Other Operating Rev.													
	396,879	466,902	545,473	627,296	550,913	555,698	573,895	578,844	583,877	622,032	627,238	632,533	637,918
14. Total Operating Rev.													
	16,250,137	18,023,068	20,997,170	20,290,860	20,624,713	21,337,777	22,070,499	22,647,891	23,162,646	21,395,312	21,617,931	21,965,843	22,258,070

** Previous Years **

** Future Years **

ITEM	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. A. Total Utility Plant (B. of Year)	30,305,249	31,677,853	34,429,058	36,185,927	39,736,996	42,553,065	44,376,884	45,428,953	46,473,522	47,209,347	47,945,172	48,680,997	49,416,822
B. Plant Addit. & Replacements	4,036,953	2,097,815	3,937,132	4,866,721	3,931,721	3,089,471	2,167,721	2,160,221	1,851,477	1,851,477	1,851,477	1,851,477	1,851,477
C. Construction Work in Prog.	-954,023	1,831,923	-1,468,668	0	0	0	0	0	0	0	0	0	0
D. Contributions in Aid of Const.	1,332,614	846,899	199,243	715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652
E. Retirements	371,182	331,634	512,352	600,000	400,000	550,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
F. Total Utility Plant (E. of Year)	31,684,383	34,429,058	36,185,927	39,736,996	42,553,065	44,376,884	45,428,953	46,473,522	47,209,347	47,945,172	48,680,997	49,416,822	50,152,647
2. Analysis of Priority Funds													
A. Distribution	2,252,759	1,054,893	845,453	4,399,612	3,464,612	2,622,362	1,700,612	1,693,112	1,384,368	1,384,368	1,384,368	1,384,368	1,384,368
B. Headquarters - Loan	0	0	0	0	0	0	0	0	0	0	0	0	0
C. Other Needs - Loan	0	0	0	0	0	0	0	0	0	0	0	0	0
D. Gen. & Trans. - Loan	0	0	0	144,700	144,700	144,700	144,700	144,700	144,700	144,700	144,700	144,700	144,700
E. Warehouse - Loan	0	0	0	0	0	0	0	0	0	0	0	0	0
F. Reimbursement of G. Funds	0	0	0	0	0	0	0	0	0	0	0	0	0
G. Total of Priority Items	2,252,759	1,054,893	845,453	4,544,312	3,609,312	2,767,062	1,845,312	1,837,812	1,529,068	1,529,068	1,529,068	1,529,068	1,529,068
LESS: H. Contrib. Aid of Const.													
I. General Funds Invested in Plant				715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652	715,652
J. Loan Funds Required for Priority Items				32,237	285,711	631,007	1,129,660	1,122,160	813,416	813,416	813,416	813,416	813,416
K. Prior Loan Funds Required				0	0	0	0	0	0	0	0	0	0
L. New Joint Loan Funds Req.				3,796,423	2,607,949	1,420,403	0	0	0	0	0	0	0
M. New Loan Funds - RUS				0	0	0	0	0	0	0	0	0	0
N. New Loan Funds - CFC				3,796,423	2,607,949	1,420,403	0	0	0	0	0	0	0
3. Analysis of Non-Priority Funds													
A. Headquarters - Gen. Funds	0	7,200	2,559,084	0	0	0	0	0	0	0	0	0	0
B. General Plant Additions	451,580	182,294	333,352	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409
C. Gen. & Trans. - Gen. Funds	0	6,529	0	0	0	0	0	0	0	0	0	0	0
D. Other Needs - Gen. Funds	0	0	0	0	0	0	0	0	0	0	0	0	0
E. Non-Priority Funds Required	451,580	196,023	2,892,436	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409
LESS: F. Special Funds Used													
G. General Funds Invested in Plant				0	0	0	0	0	0	0	0	0	0
H. Loan Funds Required - Others				322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409	322,409
Total New Loan Funds - CFC				3,796,423	2,607,949	1,420,403	0	0	0	0	0	0	0

Determination of Debt & Debt Service CFC - RUS Form 325 I

GCEC

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	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A. 1-12 / 2009	F. Bal. 1st of Year 278,951	272,145	264,819	256,931	248,439	239,297	229,454	218,858	207,449	195,166
B. 278951	G. Plus: Interest 20,594	20,074	19,512	18,908	18,258	17,557	16,804	15,991	15,117	14,176
C. 19 / 0	H. Less: Discounts 1,038	1,008	984	951	921	882	846	807	762	714
D. Level Debt	I. Less: Payments 26,362	26,392	26,416	26,449	26,479	26,518	26,554	26,593	26,638	26,686
E. 7.45% / Fix	J. Bal. End of Year 272,145	264,819	256,931	248,439	239,297	229,454	218,858	207,449	195,166	181,942
A. 2-12 / 2009	F. Bal. 1st of Year 146,447	142,875	139,030	134,890	130,433	125,634	120,468	114,907	108,918	102,471
B. 146447	G. Plus: Interest 10,812	10,539	10,244	9,927	9,585	9,218	8,823	8,395	7,937	7,443
C. 19 / 0	H. Less: Discounts 543	531	513	498	483	462	444	423	402	372
D. Level Debt	I. Less: Payments 13,841	13,853	13,871	13,886	13,901	13,922	13,940	13,961	13,982	14,012
E. 7.45% / Fix	J. Bal. End of Year 142,875	139,030	134,890	130,433	125,634	120,468	114,907	108,918	102,471	95,530
A. 3-12 / 2009	F. Bal. 1st of Year 423,002	413,852	404,001	393,397	381,979	369,686	356,450	342,202	326,862	310,347
B. 423002	G. Plus: Interest 31,262	30,561	29,808	28,994	28,119	27,176	26,164	25,072	23,897	22,632
C. 21 / 0	H. Less: Discounts 1,572	1,539	1,500	1,458	1,413	1,368	1,314	1,263	1,203	1,140
D. Level Debt	I. Less: Payments 38,840	38,873	38,912	38,954	38,999	39,044	39,098	39,149	39,209	39,272
E. 7.45% / Fix	J. Bal. End of Year 413,852	404,001	393,397	381,979	369,686	356,450	342,202	326,862	310,347	292,567
A. 4-12 / 2009	F. Bal. 1st of Year 435,465	426,324	416,460	405,813	394,322	381,921	368,537	354,092	338,501	321,675
B. 435465	G. Plus: Interest 33,271	32,548	31,765	30,921	30,011	29,028	27,967	26,821	25,586	24,253
C. 21 / 0	H. Less: Discounts 1,620	1,584	1,548	1,506	1,458	1,410	1,362	1,305	1,248	1,182
D. Level Debt	I. Less: Payments 40,792	40,828	40,864	40,906	40,954	41,002	41,050	41,107	41,164	41,230
E. 7.70% / Fix	J. Bal. End of Year 426,324	416,460	405,813	394,322	381,921	368,537	354,092	338,501	321,675	303,516
A. 5-12 / 2009	F. Bal. 1st of Year 423,002	413,852	404,001	393,397	381,979	369,686	356,450	342,202	326,862	310,347
B. 423002	G. Plus: Interest 31,262	30,561	29,808	28,994	28,119	27,176	26,164	25,072	23,897	22,632
C. 21 / 0	H. Less: Discounts 1,572	1,539	1,500	1,458	1,413	1,368	1,314	1,263	1,203	1,140
D. Level Debt	I. Less: Payments 38,840	38,873	38,912	38,954	38,999	39,044	39,098	39,149	39,209	39,272
E. 7.45% / Fix	J. Bal. End of Year 413,852	404,001	393,397	381,979	369,686	356,450	342,202	326,862	310,347	292,567
A. 6-12 / 2009	F. Bal. 1st of Year 433,022	423,652	413,565	402,704	391,011	378,424	364,872	350,282	334,574	317,662
B. 433022	G. Plus: Interest 32,002	31,285	30,511	29,679	28,785	27,820	26,782	25,664	24,460	23,164
C. 21 / 0	H. Less: Discounts 1,611	1,575	1,536	1,494	1,446	1,398	1,350	1,290	1,233	1,164
D. Level Debt	I. Less: Payments 39,761	39,797	39,836	39,878	39,926	39,974	40,022	40,082	40,139	40,208
E. 7.45% / Fix	J. Bal. End of Year 423,652	413,565	402,704	391,011	378,424	364,872	350,282	334,574	317,662	299,454

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A. 7-12 / 2009	F. Bal. 1st of Year	576,646	564,018	550,436	535,828	520,117	503,219	485,044	465,496	444,471
B. 5/76546	G. Plus: Interest	42,040	41,086	40,060	38,957	37,770	36,493	35,120	33,643	32,054
C. 21 / 0	H. Less: Discounts	2,142	2,094	2,046	1,986	1,929	1,860	1,794	1,716	1,635
D. Level Debt	I. Less: Payments	52,526	52,574	52,622	52,682	52,739	52,808	52,874	52,952	53,033
E. 7.35% / Fix	J. Bal. End of Year	564,018	550,436	535,828	520,117	503,219	485,044	465,496	444,471	421,857
A. 8-12 / 2009	F. Bal. 1st of Year	241,412	237,044	232,345	227,288	221,846	215,991	209,690	202,910	195,615
B. 241412	G. Plus: Interest	17,744	17,413	17,055	16,670	16,257	15,811	15,332	14,817	14,262
C. 23 / 0	H. Less: Discounts	897	882	864	846	822	801	777	750	723
D. Level Debt	I. Less: Payments	21,215	21,230	21,248	21,266	21,290	21,311	21,335	21,362	21,389
E. 7.40% / Fix	J. Bal. End of Year	237,044	232,345	227,288	221,846	215,991	209,690	202,910	195,615	187,765
A. 9-12 / 2009	F. Bal. 1st of Year	506,526	497,364	487,504	476,893	465,476	453,189	439,968	425,740	410,430
B. 506526	G. Plus: Interest	37,234	36,536	35,785	34,979	34,109	33,175	32,168	31,086	29,921
C. 23 / 0	H. Less: Discounts	1,470	1,851	1,815	1,770	1,731	1,686	1,626	1,575	1,515
D. Level Debt	I. Less: Payments	44,926	44,545	44,581	44,626	44,665	44,710	44,770	44,821	44,881
E. 7.40% / Fix	J. Bal. End of Year	497,364	487,504	476,893	465,476	453,189	439,968	425,740	410,430	393,955
A. 10-12 / 2009	F. Bal. 1st of Year	1,464,840	1,438,670	1,410,661	1,380,684	1,348,600	1,314,262	1,277,510	1,238,174	1,196,075
B. 1464840	G. Plus: Interest	99,678	97,839	95,871	93,764	91,510	89,096	86,512	83,749	80,791
C. 24 / 0	H. Less: Discounts	3,640	5,355	5,250	5,133	5,007	4,878	4,734	4,584	4,422
D. Level Debt	I. Less: Payments	122,208	120,493	120,598	120,715	120,841	120,970	121,114	121,264	121,426
E. 6.85% / Fix	J. Bal. End of Year	1,438,670	1,410,661	1,380,684	1,348,600	1,314,262	1,277,510	1,238,174	1,196,075	1,151,018
A. 11-12 / 2009	F. Bal. 1st of Year	315,932	310,286	304,244	297,777	290,855	283,448	275,519	267,033	257,950
B. 315932	G. Plus: Interest	21,498	21,102	20,677	20,222	19,737	19,215	18,658	18,061	17,424
C. 24 / 0	H. Less: Discounts	784	1,158	1,134	1,107	1,080	1,053	1,020	987	954
D. Level Debt	I. Less: Payments	26,360	25,986	26,010	26,037	26,064	26,091	26,124	26,157	26,190
E. 6.85% / Fix	J. Bal. End of Year	310,286	304,244	297,777	290,855	283,448	275,519	267,033	257,950	248,230
A. 9/09-12 / 2009	F. Bal. 1st of Year	1,819,512	1,791,505	1,761,219	1,728,469	1,693,053	1,654,756	1,613,342	1,568,560	1,520,133
B. 1819512	G. Plus: Interest	142,925	140,646	138,182	135,516	132,635	129,518	126,150	122,505	118,566
C. 24 / 0	H. Less: Discounts	4,522	6,266	6,558	6,432	6,294	6,150	5,988	5,817	5,628
D. Level Debt	I. Less: Payments	166,410	164,666	164,374	164,500	164,638	164,782	164,944	165,115	165,304

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		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
E. 7.90% / Fix	J. Bal. End of Year	1,791,505	1,761,219	1,728,469	1,693,053	1,654,756	1,613,342	1,568,560	1,520,133	1,467,767	1,411,138
A.9009-12/2009	F. Bal. 1st of Year	871,611	854,095	835,503	815,771	794,829	772,600	749,008	723,968	697,392	669,184
B. 871611	G. Plus: Interest	51,908	50,832	49,692	48,482	47,195	45,832	44,384	42,848	41,216	39,486
C. 24 / 0	H. Less: Discounts	2,162	2,118	3,108	3,030	2,949	2,865	2,772	2,676	2,577	2,469
D. Level Debt	I. Less: Payments	67,262	67,306	66,316	66,394	66,475	66,559	66,652	66,748	66,847	66,955
E. 6.00% / Fix	J. Bal. End of Year	854,095	835,503	815,771	794,829	772,600	749,008	723,968	697,392	669,184	639,246
A.9009-12/2009	F. Bal. 1st of Year	869,280	851,808	833,264	813,583	792,693	770,522	746,991	722,015	695,506	667,371
B. 869280	G. Plus: Interest	51,768	50,696	49,559	48,350	47,069	45,709	44,264	42,731	41,105	39,379
C. 24 / 0	H. Less: Discounts	2,158	2,112	3,096	3,021	2,943	2,856	2,769	2,673	2,568	2,071
D. Level Debt	I. Less: Payments	67,082	67,128	66,144	66,219	66,297	66,384	66,471	66,567	66,672	67,169
E. 6.00% / Fix	J. Bal. End of Year	851,808	833,264	813,583	792,693	770,522	746,991	722,015	695,506	667,371	637,510
A.9009-12/2009	F. Bal. 1st of Year	356,949	350,791	344,184	336,227	327,780	318,816	309,301	299,203	288,485	277,109
B. 356949	G. Plus: Interest	25,182	24,733	20,475	19,985	19,468	18,917	18,334	17,714	17,056	16,358
C. 24 / 0	H. Less: Discounts	888	872	1,281	1,248	1,215	1,182	1,146	1,110	769	684
D. Level Debt	I. Less: Payments	30,452	30,468	27,151	27,184	27,217	27,250	27,286	27,322	27,663	27,748
E. 6.00% / Fix	J. Bal. End of Year	350,791	344,184	336,227	327,780	318,816	309,301	299,203	288,485	277,109	265,035
A.9009-12/2009	F. Bal. 1st of Year	312,814	307,108	301,009	294,491	287,525	280,081	272,125	263,622	254,536	244,824
B. 312814	G. Plus: Interest	20,818	20,425	20,006	19,558	19,080	18,568	18,021	17,438	16,812	16,146
C. 24 / 0	H. Less: Discounts	776	764	794	1,092	1,068	1,041	1,008	766	628	604
D. Level Debt	I. Less: Payments	25,748	25,760	25,730	25,432	25,456	25,483	25,516	25,758	25,896	25,920
E. 6.70% / Fix	J. Bal. End of Year	307,108	301,009	294,491	287,525	280,081	272,125	263,622	254,536	244,824	234,446
A.9010-12/2009	F. Bal. 1st of Year	954,095	943,321	931,783	919,429	906,200	892,034	876,866	860,624	843,232	824,608
B. 954095	G. Plus: Interest	65,558	64,794	63,978	63,103	62,166	61,164	60,090	58,940	57,708	56,389
C. 29 / 0	H. Less: Discounts	2,376	2,348	2,316	3,426	3,106	2,734	2,340	2,136	2,092	2,044
D. Level Debt	I. Less: Payments	73,956	73,984	74,016	72,906	73,226	73,598	73,992	74,196	74,240	74,288
E. 6.90% / Fix	J. Bal. End of Year	943,321	931,783	919,429	906,200	892,034	876,866	860,624	843,232	824,608	804,665
A.9010-12/2009	F. Bal. 1st of Year	2,822,175	2,778,468	2,731,573	2,681,259	2,627,276	2,569,357	2,507,215	2,440,542	2,369,009	2,292,259
B. 2822175	G. Plus: Interest	199,229	196,041	192,622	188,953	185,017	180,794	176,263	171,403	166,186	160,591
C. 25 / 0	H. Less: Discounts	7,016	6,902	6,784	6,662	6,516	6,364	6,206	6,036	5,850	5,654

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D. Level Debt		I. Less: Payments	235,920	236,034	236,152	236,274	236,420	236,572	236,730	236,900	237,086
E. 7.10% / Fix		J. Bal. End of Year	2,778,468	2,731,573	2,681,259	2,627,276	2,569,357	2,507,215	2,440,542	2,369,009	2,292,259
											2,209,914
A. 9010-12 / 2009		F. Bal. 1st of Year	955,746	943,479	930,409	916,482	901,642	885,829	868,979	851,025	831,894
B. 955746		G. Plus: Interest	60,877	60,074	59,217	58,304	57,331	56,294	55,190	54,013	52,759
C. 29 / 0		H. Less: Discounts	2,380	2,348	2,316	2,276	2,240	2,200	2,156	2,108	2,060
D. Level Debt		I. Less: Payments	70,764	70,796	70,828	70,868	70,904	70,944	70,988	71,036	71,084
E. 6.40% / Fix		J. Bal. End of Year	943,479	930,409	916,482	901,642	885,829	868,979	851,025	831,894	811,509
											789,787
A. 9010-12 / 2009		F. Bal. 1st of Year	485,601	479,134	472,219	464,825	456,919	448,466	439,428	429,764	419,010
B. 485601		G. Plus: Interest	32,617	32,169	31,690	31,178	30,631	30,046	29,420	25,546	24,887
C. 27 / 0		H. Less: Discounts	1,208	1,192	1,174	1,154	1,134	1,112	1,090	1,064	1,036
D. Level Debt		I. Less: Payments	37,876	37,892	37,910	37,930	37,950	37,972	37,994	35,236	35,264
E. 6.00% / Fix		J. Bal. End of Year	479,134	472,219	464,825	456,919	448,466	439,428	429,764	419,010	407,597
											395,484
A. 9010-12 / 2009		F. Bal. 1st of Year	976,488	955,517	941,273	926,153	910,105	893,073	874,996	855,810	835,446
B. 976488		G. Plus: Interest	30,513	57,016	56,140	55,212	54,228	53,183	52,074	50,896	49,646
C. 29 / 0		H. Less: Discounts	2,422	2,376	2,340	2,300	2,258	2,216	2,168	2,120	2,068
D. Level Debt		I. Less: Payments	49,062	68,884	68,920	68,960	69,002	69,044	69,092	69,140	69,192
E. 6.00% / Fix		J. Bal. End of Year	955,517	941,273	926,153	910,105	893,073	874,996	855,810	835,446	813,832
											790,891
A. 9010-12 / 2009		F. Bal. 1st of Year	981,282	960,206	945,892	930,700	914,575	897,462	879,298	860,019	839,557
B. 981282		G. Plus: Interest	30,664	57,294	56,416	55,483	54,495	53,444	52,329	51,146	49,891
C. 29 / 0		H. Less: Discounts	2,434	2,388	2,350	2,312	2,270	2,226	2,180	2,132	2,078
D. Level Debt		I. Less: Payments	49,306	69,220	69,258	69,296	69,338	69,382	69,428	69,476	69,530
E. 6.00% / Fix		J. Bal. End of Year	960,206	945,892	930,700	914,575	897,462	879,298	860,019	839,557	817,840
											794,790
A. 9010-12 / 2009		F. Bal. 1st of Year	984,310	962,888	948,272	932,759	916,295	898,819	880,271	860,586	839,692
B. 984310		G. Plus: Interest	30,754	57,448	56,551	55,600	54,588	53,516	52,379	51,170	49,889
C. 29 / 0		H. Less: Discounts	2,442	2,396	2,356	2,316	2,274	2,230	2,184	2,132	2,078
D. Level Debt		I. Less: Payments	49,734	69,668	69,708	69,748	69,790	69,834	69,880	69,932	69,986
E. 6.00% / Fix		J. Bal. End of Year	962,888	948,272	932,759	916,295	898,819	880,271	860,586	839,692	817,517
											793,981
A. 9010-12 / 2009		F. Bal. 1st of Year	496,054	487,877	479,305	471,695	463,617	455,044	445,944	436,286	426,036
B. 496054		G. Plus: Interest	23,419	23,024	28,590	28,122	27,627	27,100	26,542	25,950	25,321
											24,652

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E. = Interest Rate / Loan Type

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
C. 29 / 0	1,232	1,210	1,192	1,172	1,152	1,130	1,106	1,082	1,054	1,028
D. Level Debt	30,364	30,386	35,008	35,028	35,048	35,070	35,094	35,118	35,146	35,172
E. 6.00% / Fix	487,877	479,305	471,695	463,617	455,044	445,944	436,286	426,036	415,157	403,609
A.2010- 8 / 2010										
F. Bal. 1st of Year	3,796,423	3,796,423	3,749,542	3,699,786	3,646,976	3,590,926	3,531,436	3,468,296	3,401,280	3,330,152
B. 3796423	103,383	226,743	223,868	220,814	217,574	214,134	210,484	206,608	202,496	198,131
C. 30 / 0		9,446	9,328	9,200	9,066	8,922	8,772	8,610	8,436	8,256
D. Level Debt	103,383	264,178	264,296	264,424	264,558	264,702	264,852	265,014	265,188	265,368
E. 6.00% / Fix	3,796,423	3,749,542	3,699,786	3,646,976	3,590,926	3,531,436	3,468,296	3,401,280	3,330,152	3,254,659
A.2011- 7 / 2011										
F. Bal. 1st of Year	2,607,949	2,607,949	2,575,742	2,541,559	2,505,277	2,466,770	2,425,901	2,382,523	2,336,484	2,287,619
B. 2607949		82,112	155,761	153,785	151,686	149,461	147,099	144,590	141,929	139,103
C. 30 / 0			6,490	6,408	6,320	6,228	6,130	6,024	5,914	5,796
D. Level Debt		82,112	181,478	181,560	181,648	181,740	181,838	181,944	182,054	182,172
E. 6.00% / Fix		2,607,949	2,575,742	2,541,559	2,505,277	2,466,770	2,425,901	2,382,523	2,336,484	2,287,619
A.2012- 4 / 2012										
F. Bal. 1st of Year			1,420,403	1,402,861	1,384,243	1,364,483	1,343,509	1,321,249	1,297,623	
B. 1420403			62,951	126,815	125,568	117,402	116,188	114,902	78,750	77,299
C. 30 / 0				3,536	3,490	3,444	3,392	3,338	3,280	3,224
D. Level Debt			62,951	140,821	140,696	133,718	133,770	133,824	99,096	99,152
E. 6.00% / Fix			1,420,403	1,402,861	1,384,243	1,364,483	1,343,509	1,321,249	1,297,623	1,272,546
Total Debt and Debt Service CFC										
A. Debt - First of Year	18,131,162	21,602,702	23,840,462	24,833,376	24,358,962	23,852,062	23,310,415	22,731,626	22,112,687	21,451,326
B. New Funds -- Advanced	3,796,423	2,607,949	1,420,403							
C. Interest Exp.	1,247,012	1,513,591	1,626,794	1,661,275	1,628,618	1,586,847	1,549,705	1,506,771	1,429,563	1,384,193
D. Less Discounts	48,905	61,854	70,173	73,792	71,998	70,066	67,988	65,787	63,416	60,906
E. Debt Payments	1,522,990	1,821,926	1,984,110	2,061,897	2,063,520	2,058,428	2,060,506	2,059,923	2,027,508	2,030,018
F. Debt - End of Year	21,602,702	23,840,462	24,833,376	24,358,962	23,852,062	23,310,415	22,731,626	22,112,687	21,451,326	20,744,595

A. = Note-Date of Note;		B. = Amount of Note;		C. = Amortization Period / Deferral Period				D. = Amortization Type;		E. = Interest Rate / Loan Type			
		2010		2011	2012	2013	2014	2015		2016	2017	2018	2019
1.	A. 1-9 / 2009	F. Bal. 1st of Year	128,295	106,533	82,977	57,480	29,881	7					
	B. 128295	G. Plus: Interest	9,622	7,828	5,887	3,785	1,510						
	C. 5 / 0												
	D. Level Debt	I. Less: Payments	31,384	31,384	31,384	31,384	31,384	7					
	E. 8.00% / Fix	J. Bal. End of Year	106,533	82,977	57,480	29,881	7						
2.	Total Debt and Debt Service Other												
	A. Debt - First of Year		128,295	106,533	82,977	57,480	29,881	7					
	B. New Funds -- Advanced												
	C. Interest Exp.		9,622	7,828	5,887	3,785	1,510						
	D. Bond Costs												
	E. Debt Payments		31,384	31,384	31,384	31,384	31,384	7					
	F. Debt - End of Year		106,533	82,977	57,480	29,881	7						

ITEM	** Previous Years **			** Future Years **									
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. A. Total Mwh Requirements	160,745	157,200	164,985	160,011	163,411	168,860	169,240	173,622	176,992	163,872	165,670	168,298	170,483
B. Cost per Mwh Purchased	69.91	77.91	87.60	87.60	87.60	87.60	87.60	87.60	87.60	87.60	87.60	87.60	87.60
B1. Flow Through Adj. per Mwh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C. Cost of Power	11,238,653	12,248,080	14,453,779	14,018,023	14,315,937	14,793,244	14,826,532	15,210,422	15,505,714	14,356,263	14,513,834	14,744,077	14,935,425
2. A. Consumer Accts. & Sales	403,154	432,045	474,441	488,674	503,334	518,434	533,988	550,007	566,507	583,503	601,008	619,038	637,609
B. Cost per Consumer Served	46.53	48.01	52.70	54.52	55.17	55.05	55.14	55.47	56.00	56.19	61.19	63.36	64.50
C. Average Nbr. of Consumers	8,664	8,998	9,001	8,963	9,123	9,416	9,683	9,914	10,116	9,535	9,634	9,770	9,885
3. A. Operating & Maint. Exp.	2,059,043	1,974,990	1,895,276	1,952,134	2,010,699	2,071,019	2,133,150	2,197,144	2,263,058	2,330,950	2,400,879	2,472,905	2,547,093
B. Ratio to Total Utility Plant	6.49	5.73	5.23	4.91	4.72	4.66	4.69	4.72	4.79	4.86	4.93	5.00	5.07
4. A. Admin. Gen. & Other Exp.	932,189	989,056	1,028,591	1,059,449	1,091,232	1,123,969	1,157,688	1,192,419	1,228,191	1,265,037	1,302,988	1,342,078	1,382,340
B. Ratio to Total Utility Plant	2.94	2.87	2.84	2.66	2.56	2.53	2.54	2.56	2.60	2.63	2.67	2.71	2.75
5. A. Deprec. & Amortiz. Exp.	911,254	948,535	1,050,068	1,128,531	1,208,507	1,260,304	1,290,182	1,319,848	1,340,745	1,361,643	1,382,540	1,403,438	1,424,335
B. Ratio to Total Utility Plant	2.87	2.75	2.90	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84
6. A. Tax Expense	0	0	0	0	0	0	0	0	0	0	0	0	0
B. Ratio to Total Utility Plant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7. A. Discount Early Pay. Debt	0	0	0	0	0	0	0	0	0	0	0	0	0
8. A. Total Utility Plant / 1000	31,684	34,429	36,185	39,736	42,553	44,376	45,428	46,473	47,209	47,945	48,680	49,416	50,152
ITEM	Determination of CFC - Transactions - CFC Form 101 L												
1. Equity Investment in CFC (First of Year)													
A. Subscription CTC's				363,724	363,724	363,724	363,724	363,724	363,724	363,724	363,724	363,724	363,724
B. Loan CTC's (Purch. prior 1983)				0	0	0	0	0	0	0	0	0	0
C. Loan CTC's (Purch. after 1983)				268,096	277,448	309,897	369,765	403,637	410,664	402,969	395,133	386,775	377,848
D. CFC Patronage Capital				297,852	405,428	463,417	512,403	555,593	587,916	612,858	633,090	649,512	670,785
E. Total Equity Investment				929,672	1,046,600	1,137,038	1,245,892	1,322,954	1,362,304	1,379,551	1,391,947	1,400,011	1,412,357
F. CFC Debt to Equity Ratio				24.01	22.37	22.73	22.16	20.96	19.85	19.00	18.23	17.50	16.69
G. Percentage Loan CTC's Required				2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2. Changes in Equity Investment in CFC													
A. Purchase of Loan CTC's				15,000	37,964	64,044	40,283	14,204	0	0	0	0	0
B. Refund of Loan CTC's				5,648	5,515	4,176	6,411	7,177	7,695	7,836	8,358	8,927	9,523
C. Patronage Capital Accrual				109,091	136,971	149,254	154,363	151,293	148,012	144,516	140,422	136,413	132,129
D. Patronage Capital Rotation				1,515	78,982	100,268	111,173	118,970	123,070	124,284	124,000	115,140	113,730
E. Total Equity Changes				116,928	90,438	108,854	77,062	39,350	17,247	12,396	8,064	12,346	8,876
3. Income from Investments in CFC													
A. Interest from Subscription CTC's				10,912	10,912	10,912	10,912	10,912	10,912	10,912	10,912	10,912	10,912
B. Interest from Pre 1983 Loan CTC's				0	0	0	0	0	0	0	0	0	0
C. Patronage Capital Income				109,091	136,971	149,254	154,363	151,293	148,012	144,516	140,422	136,413	132,129
D. Total Income from CFC Equity				120,003	147,883	160,166	165,275	162,205	158,924	155,428	151,334	147,325	143,041

02/24/2010 2010 Forecast

Statement of Cash Flow - Indirect Method - CFC Form 101 M

GCEC

AZ - 17

ITEM

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

Beginning Cash Flow

Total Cash - Beginning of Year

\$ 1,329,728	\$ 2,384,220	\$ 2,875,593	\$ 2,985,022	\$ 3,147,093	\$ 3,432,675	\$ 4,187,887	\$ 4,207,171	\$ 4,171,432	\$ 4,152,922
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I. Cash Flows from Operating Activities

A. Depreciation Expense

\$ 1,128,531	\$ 1,208,507	\$ 1,260,304	\$ 1,290,182	\$ 1,319,848	\$ 1,340,745	\$ 1,361,643	\$ 1,382,540	\$ 1,403,438	\$ 1,424,335
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B. Net Margins

754,180	385,369	374,785	913,645	997,251	1,120,234	395,913	356,036	399,301	389,747
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C. Materials & Supplies - Electric

0	0	0	0	0	0	0	0	0	0
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D. Other Assets & Debts

-117,576	-68,189	-59,390	-53,802	-43,147	-35,983	-31,494	-27,909	-32,990	-30,350
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E. Other Liabilities & Credits

1,258,758	0	0	0	0	0	0	0	0	0
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F. Net Cash Inflows - Oper. Activities

\$ 3,023,893	\$ 1,525,687	\$ 1,575,699	\$ 2,150,025	\$ 2,273,952	\$ 2,424,996	\$ 1,726,062	\$ 1,710,667	\$ 1,769,749	\$ 1,783,732
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II. Cash Flows from Investment Activities

A. Depreciation Expense

\$ -1,128,531	\$ -1,208,507	\$ -1,260,304	\$ -1,290,182	\$ -1,319,848	\$ -1,340,745	\$ -1,361,643	\$ -1,382,540	\$ -1,403,438	\$ -1,424,335
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B. Total Utility Plant

-3,551,069	-2,816,069	-1,823,819	-1,052,069	-1,044,569	-735,825	-735,825	-735,825	-735,825	-735,825
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C. Accum. Provision for Deprec.

528,531	808,507	710,304	890,182	919,848	940,745	961,643	982,540	1,003,438	1,024,335
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D. General Funds Excludable

-9,352	-32,449	-59,868	-33,872	-7,027	7,695	7,836	8,358	8,927	9,523
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E. Temporary Invest. - Non Cash

0	0	0	0	0	0	0	0	0	0
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F. Notes Receivable - Net

0	0	0	0	0	0	0	0	0	0
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G. Materials & Supplies - Electric

0	0	0	0	0	0	0	0	0	0
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H. Net Cash Inflows - Inv. Activities

\$ -4,160,421	\$ -3,248,518	\$ -2,433,687	\$ -1,485,941	\$ -1,451,596	\$ -1,128,130	\$ -1,127,989	\$ -1,127,467	\$ -1,126,898	\$ -1,126,302
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III. Cash Flows from Financing Activities

A. Net Margins

\$ -754,180	\$ -385,369	\$ -374,785	\$ -913,645	\$ -997,251	\$ -1,120,234	\$ -395,913	\$ -356,036	\$ -399,301	\$ -389,747
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B. Memberships

0	0	0	0	0	0	0	0	0	0
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C. Total Capital or Margins

754,180	385,369	374,785	913,645	997,251	1,120,234	395,913	356,036	399,301	389,747
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D. Total Long Term Debt

2,191,020	2,214,204	967,417	-502,013	-536,774	-541,654	-578,789	-618,939	-661,361	-706,731
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E. Notes Payable - Net

0	0	0	0	0	0	0	0	0	0
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F. Consumer Deposits

0	0	0	0	0	0	0	0	0	0
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G. Net Cash Inflows - Fin. Activities

\$ 2,191,020	\$ 2,214,204	\$ 967,417	\$ -502,013	\$ -536,774	\$ -541,654	\$ -578,789	\$ -618,939	\$ -661,361	\$ -706,731
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IV. Cash Flows from All Activities

\$ 1,054,492	\$ 491,373	\$ 109,429	\$ 162,071	\$ 285,582	\$ 755,212	\$ 19,284	\$ -35,739	\$ -18,510	\$ -49,301
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Total Cash - End of Year

\$ 2,384,220	\$ 2,875,593	\$ 2,985,022	\$ 3,147,093	\$ 3,432,675	\$ 4,187,887	\$ 4,207,171	\$ 4,171,432	\$ 4,152,922	\$ 4,103,621
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ITEM	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
A. LTD - RUS - Beginning of Year										
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0
Total LTD - RUS - B. of Year	0	0	0	0	0	0	0	0	0	0
B. Total Interest - RUS Debt										
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0
Total Interest - RUS Debt	0	0	0	0	0	0	0	0	0	0
C. Principal Payments - RUS Debt										
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0
Total Principal - RUS Debt	0	0	0	0	0	0	0	0	0	0
D. Advances - RUS Debt										
3. LTD - RUS (Post 6/83)	0	0	0	0	0	0	0	0	0	0
E. Changes in Long Term Debt - RUS										
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0
Total Changes LTD - Buy Out	0	0	0	0	0	0	0	0	0	0
F. Long Term Debt - RUS End of Year										
1. Long Term Debt - 2%	0	0	0	0	0	0	0	0	0	0
2. Long Term Debt - 5%	0	0	0	0	0	0	0	0	0	0
3. Long Term Debt - (Post 6/83)	0	0	0	0	0	0	0	0	0	0
Total LTD - RUS - End of Year	0	0	0	0	0	0	0	0	0	0
G. Long Term Debt - CFC - B. of Year	19,518,215	21,709,235	23,923,439	24,890,856	24,388,843	23,852,069	23,310,415	22,731,626	22,112,687	21,451,326
H. 1. Total Interest - CFC Debt	1,256,634	1,521,419	1,632,681	1,665,060	1,630,128	1,586,847	1,549,705	1,506,771	1,429,563	1,384,193
2. CFC Discount - Performance	-22,514	-26,834	-29,608	-30,816	-30,210	-29,564	-28,869	-28,129	-27,333	-26,494
3. CFC Discount - Volume	-3,877	-8,186	-10,957	-12,160	-11,578	-10,938	-10,250	-9,529	-8,750	-7,918
4. CFC Discount - 100% Borrower	-22,514	-26,834	-29,608	-30,816	-30,210	-29,564	-28,869	-28,129	-27,333	-26,494
Tot. Int. - CFC Debt Less Discounts	1,207,729	1,459,565	1,562,508	1,591,268	1,558,130	1,516,781	1,481,717	1,440,984	1,366,147	1,323,287
I. Principal Payments - CFC Debt	324,883	370,189	427,489	474,414	506,900	541,647	578,789	618,939	661,361	706,731
J. Advances - CFC Debt	3,796,423	2,607,949	0	0	0	0	0	0	0	0
K. Changes in LTD - CFC Buy Out	-1,258,758	0	1,420,403	0	0	0	0	0	0	0
L. Long Term Debt - CFC End of Year	21,709,235	23,923,439	24,890,856	24,388,843	23,852,069	23,310,415	22,731,626	22,112,687	21,451,326	20,744,595
M. Changes in Balance Sheet - Buy Out										
1. Unamortized Gain - Beg. of Year	0	0	0	0	0	0	0	0	0	0
2. Amortized Gain on Prepayment	0	0	0	0	0	0	0	0	0	0
3. Unamortized Gain - End of Year	0	0	0	0	0	0	0	0	0	0
4. General Funds Used in Buy Out	0	0	0	0	0	0	0	0	0	0
N. Other Interest Expense	11,619	11,619	11,619	11,619	11,619	11,619	11,619	11,619	11,619	11,619
O. Tot. Interest Exp. Less Discounts	1,219,348	1,471,184	1,574,127	1,602,887	1,569,749	1,528,400	1,493,336	1,452,603	1,377,766	1,334,906